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**Value co-creation of small knowledge-intensive business service firms in a
developing country: the case of selected companies in Vietnam**

Master's Thesis in 2017

VAASA 2017

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Topic of the Thesis:

Value co-creation of small knowledge-intensive business service firms in a developing country: the case of selected companies in Vietnam

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Degree:

Master of Science in Economics and Business

Master Programme:

Strategic Business Development

Year of Entering the University:

2015

Year of Completing the Thesis:2017 **Pages:** 98

ABSTRACT

This thesis aims to examine how value co-creation process is organized in small KIBS firms in developing countries. In particular, the goal is to identify the main responsibilities of supplier and customer and identify critical resources and capabilities of small KIBS firms. The research design corresponds to a qualitative multiple-case study. Case companies were selected by a criteria purposive sampling. Data were collected through semi-structured interviews and then analyzed at two levels: a within-case analysis and a cross-case analysis. The results show that the structure of value co-creation process in small KIBS firms is designed flexibly but typically consists of five main activities as service introduction, customers' need identification, implementation, evaluation and after-sale support. The value co-creation process is also characterised with interruptions and repetitions so that it is not a linear process. Through interactions in co-creation, both KIBS suppliers and customers can learn from each other and enhance their competences. Besides, knowledge is commonly defined as key resource of small KIBS firms, particularly tacit knowledge which is accumulated over the time such as experience and know-how. Combined with knowledge, relational capability and dynamic capability are also highlighted in the context of developing economy.

KEYWORDS: value co-creation, relationship learning, KIBS, small business, resources, capabilities.

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1. Introduction

1.1. Overview of the previous studies

Research on knowledge-intensive business services (KIBS), which has recently been carried out from the 1990s, has so far strongly concentrated either on conceptualizing KIBS as a business sector and emphasizing their influence in knowledge-based economies. Miles et al. (1995) set up the foundation for KIBS by identifying the main characteristics of KIBS and classified KIBS into two main types as traditional professional services and new-technology-based KIBS. Later studies on KIBS (Hertog, 2000; Muller & Doloreux, 2009; Toivonen, 2004) also tried to redefine and classify KIBS into sectors and sub-sectors. As a result, there is a variety of definitions for KIBS due to the heterogeneous nature of KIBS.

Since KIBS became a distinct research topic instead of being under the terms as “professional service” or “business services”, the literature also addressed the knowledge aspect of KIBS. Knowledge is not only the main input in KIBS which mostly relies on “professional knowledge or expertise relating to a technical or function domain”, but KIBS outputs also contain a high degree of intangible knowledge (Miles et al., 1995). Hertog (2000) also highlights the importance of knowledge flows that take place through interactions between KIBS and their clients. Knowledge transfer requires elaboration of knowledge bases from both supplier and customer side than information transfer (Miles et al., 1995). Client contribution also plays an important role in knowledge transfer process as the appropriation of knowledge by KIBS customers is seen as a re-engineering process performed by KIBS in collaboration with their customers. Therefore, it is recently acknowledged that KIBS firms are not only knowledge suppliers on one way but rather a dyadic process involving both customer and supplier (Aarikka-Stenroos & Jaakkola, 2012; Muller & Doloreux, 2007).

Another aspect that has been strongly emphasized in the KIBS literature is the central role of KIBS in strengthening KIBS clients’ innovation (Hertog, 2000; Wood, 2005). Later on, studies on innovation issue in KIBS have evolved from the ability to enhance KIBS clients’ innovation to the capability to innovate by themselves. KIBS firm not only acts as a contributor, facilitator of innovation but also as a co-producer of

innovation. Through interaction with clients, KIBS's knowledge bases also change as KIBS firms acquire clients' knowledge of a specific industry and gain more experience. As a result, KIBS firms enhance their competences and differentiate their services offered as well as learn about new business opportunities (Hertog, 2000). In general, KIBS usually are highly innovative in its own right and also enable and support innovation in other economic sectors.

Many recent studies on KIBS also focus on value creation process, especially value co-creation in KIBS to provide the insight of co-creation in complex services and identify specific roles of both customer and supplier to improve the outcome of the process (Aarikka-Stenroos & Jaakkola, 2012; Bettencourt et al., 2002; Kohtamäki & Partanen, 2016; Petri & Jacob, 2016). Value co-creation in KIBS is often seen as a joint process in which both customer and supplier get involved by contributing their resources and capabilities to achieve optimal value-in-use (Aarikka-Stenroos & Jaakkola, 2012; Bettencourt et al., 2002; Kohtamäki & Partanen, 2016; Payne, Storbacka, & Frow, 2008; Tuli, Kohli, & Bharadwaj, 2007). The process can also be considered as a learning process in which knowledge is transferred from both sides to the other, thus parties take part in the process can learn, improve their competences and get more business opportunities (Kohtamäki & Partanen, 2016; Miles et al., 1995; Payne et al., 2008). Besides, the role of key value-creating activities as communicating through dialogue, knowing through knowledge renewal and relating through relationship development in service-dominant logic suggested by Ballantyne and Varey (2006) are confirmed in knowledge-intensive business services' value co-creation process.

Understanding the role of customer and supplier firm in value co-creation process in knowledge-intensive business services will help KIBS firms to design their process effectively and encourage customers to get involved in providing significant information and integrating resources to ensure the best result of the cooperation. On the other hand, KIBS's clients can also recognize the importance of their involvement in the process to actively contribute to achieve the mutual objectives.

1.2. Research problem

The present study focuses on the value co-creation process of KIBS in developing countries. Although there have been some recent studies on the value co-creation in service-dominant logic, in particular KIBS, these studies concentrated on the conceptualization of value co-creation and the role of customers in this process. Specifically, several studies specified client's role or factors that encourage customers to engage in value co-creation with suppliers (Bettencourt et al., 2002; Petri & Jacob, 2016). However, not many studies examine carefully what is happening in the value co-creation process, and how the involvement of customer and supplier vary through different stages from supplier's perspective. In addition, there is a lack of in-depth case studies that concentrate on the impact of relationship learning in service exchanges to customers and suppliers, which was conceptualized by Fred Seines & James Sallis (2003: 3) and studied quantitatively by Kohtamäki & Partanen (2016). Besides, key resources and capabilities of KIBS have not been thoroughly identified. While KIBS are particularly of interest in European countries such as Finland (Miles, 2005), there have been little studies done in the context of developing countries, where there is an increasing demand for knowledge-intensive services and many young KIBS looking up for opportunities. In developing economies, there are differences in KIBS's characteristics and customers' expectation that require KIBS firms to recognize them to suitably design its service offering.

Besides, this study aims to focus on small KIBS firms, as resources and capabilities of these companies are generally limited if compared to large companies and consequently influence the value created for customers. It is essential for small companies know how to enhance value created for customers in order to build their own competitiveness against large competitors. Considering that value co-creation process is very important for KIBS firms as this process determines the quality of service outcome as well as forming a value experience for customer, the aim of this thesis is to analyse the value creation process in small KIBS firms in Vietnam. Second, this study also analyses key resources and capabilities to both solve client's problem and build up KIBS firm's competitiveness.

1.3. Research questions and objective

The general objective of this study is to examine the value co-creation process in the context of small knowledge-intensive business services in developing economies while highlighting the key resources and capabilities that are needed to support a successful co-creation. Specifically, the present study addresses the following research questions:

- How is the value co-creation process structured from the perspective of small KIBS in developing countries? What are the roles of KIBS firms and customers in this process?
- What are the critical resources and capabilities of small KIBS needed for value co-creation process?

The study underpins a number of particular objectives. The first objective is to gain a more complete understanding of value co-creation process in the context of small knowledge-intensive business services in developing countries. By identifying specific responsibilities of suppliers and customers of KIBS when taking part in the co-creation process, a comprehensive insight of the value co-creation process will help small KIBS companies to make better decisions in designing their delivering service process and collaborate effectively with customer to enhance the result of outcome. The second objective is to clarify what small KIBS firms have to pay attention to in the value co-creation in a market where customers have not much experience before. Furthermore, another objective is to show the two-way relationship between the involvement of customer and supplier and value co-creation process. The acknowledgement of value co-creation process will enable KIBS firms and their clients to learn from each other and thus improve their business competences. Finally, the last objective is to identify critical resources and capabilities which small KIBS firms need to build up to support the value co-creation as well as strengthen their competences.

The study is structured as follows. First, the introduction part will provide an overview of existed studies and identify the research questions as well as objectives of this study. Then a literature review will be conducted in order to have a thorough understanding of the concepts related to the research purpose. The next part is about the research methodology in which it describes the research methodology, research context as well as data collection and data analysis. This research corresponds to a multiple-case study

in order to thoroughly understand and analyze the value co-creation process based on the existing theory. Later on, the interpretation of the findings will help to draw conclusions to my research questions. Finally, the study suggests some managerial implications for small KIBS firms when taking part in a value co-creation process in collaboration with customers in order to achieve optimal outcome and enhance their competences. It also proposes recommendations on key resources and capabilities small KIBS firms should focus on and build up in order to successfully co-create value with their clients and enhance their competences in a highly competitive environment.

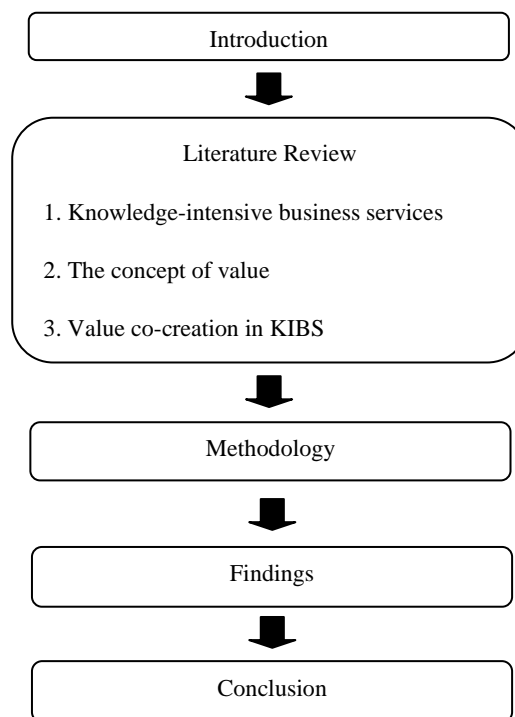


Figure 1: The structure of the study

1.4. Delimitation of the study

As mentioned before, this research was conducted in the context of KIBS sector in a developing country. The present study focuses on KIBS sector as the significance of this sector to the whole economy. Many studies have identified the relationship between KIBS sector and the level of innovation and performance of the whole economy (Hipp, 1999; Miles et al., 1995; Zieba, 2013). KIBS has been considered as “bridges of knowledge” between customers’ tacit knowledge base and the wider knowledge base of the economy (Muller & Doloreux, 2009). This study also focuses on emerging market rather than developed market as there have been many studies of KIBS sector in Europe and studies on KIBS are popularly prominent in European countries (Miles, 2005). An emerging market like Vietnam is experiencing the development of KIBS sector, especially in small and medium-size enterprises.

This study concentrated on the supplier perspective as suppliers usually take an active role in designing and organizing the process as well as encouraging customers to engage in the value co-creation process, particularly in a market when customers have not much experience with KIBS (Aarikka-Stenroos & Jaakkola, 2012). This study also focuses on small companies as most of the companies in KIBS sector in Vietnam are small and medium-size enterprises (VCCI, 2016). In comparison with big companies, small enterprises have to face more challenges due to lack of resources such as capital investment, customer relationships, talented or high qualified staff and a recognized brand. Research on small KIBS firms may reveal interesting points as how managers’ mind-set of small businesses can impact success in the future. Furthermore, it was very challenging to get the permission of directors or top managers of big companies for interview. Focusing on small businesses enabled the researcher to get approach to more companies and top managers for valuable information. The author only collected empirical data from by interviewing the KIBS firms, customers view is delimited outside of the thesis.

In addition, although many aspects of KIBS could be analyzed, this study has been limited to value co-creation process as value co-creation process has been characterized as an important topic in service dominant literature, especially in complex services like KIBS. The way the process is structured and the involvement of customers and

suppliers in the process can directly impact the outcome of the project. Therefore, it is necessary to find out how small KIBS firms interact with their customers in a collaboration relationship and what are KIBS's critical resources and capabilities to contribute to this process.

In the list below, the author identified key concepts that are necessary for this thesis. A more in-depth discussion related to each concept will be introduced in the literature review:

Knowledge-intensive business services (KIBS): private firms who rely heavily on professional knowledge (knowledge or expertise in a specific domain) to provide intermediate products and services for other companies to solve customers' problem. KIBS can include a range of services such as technology solution, marketing, advertising, accounting, human resource training etc.

Value concept: The concept of value varies to different stakeholders. Two forms of value are defined as exchange value and value-in-use. Exchange value refers to value that are solely created by a supplier and then delivered to customers. Value-in-use means that value is only created when customers consume a product or service. Customer often perceived Value as trade-off between the benefits and the sacrifices in a supplier's offering (Grönroos, 2008a, 2011; Ulaga & Eggert, 2005).

Value creation: the process in which value is created. The traditional approach assumed that value creation occurs inside the supplier firm through a chain of activities (Porter, 1980; Prahalad & Ramaswamy, 2004).

Value co-creation: a joint process in which both customer and supplier engage in by integrating their resources to co-create value through interactions (Aarikka-Stenroos & Jaakkola, 2012; Grönroos, 2008b; Grönroos & Voima, 2013).

2. An overview of previous literature

2.1. Knowledge-intensive business services

2.1.1. Definition

As the role of KIBS has been increasingly important for a transition from an industry economy into a knowledge-based economy, many western countries especially European Union countries have paid more attention to KIBS in recent years (Miles, 2005). There is also an evidence of dramatic growth and international scope development of knowledge-intensive services (KIBS) in emerging markets like China, and Indian (Javalgi, Gross, Joseph, & Granot, 2011). As the increasing development and importance of KIBS in an economy, many studies have been recently done to define KIBS as well as to identify basic characteristics of KIBS.

Some studies has pointed out that it is difficult to conceptualize and measure the knowledge intensity of these services. Miles (2005) suggested one possible indicator as the structure of the formal education of employees working for these companies to define the knowledge-intensity of KIBS. However, this indicator cannot encompass the level of working experience and informal education of the employees, which are very critical to KIBS performance. Additionally, other forms of knowledge such as tacit knowledge or learning capability of an organization to acquire knowledge from an external environment are not taken into considerations. Furthermore, this indicator cannot include the service innovation which is strongly related to competencies and knowledge (Aslesen & Isaksen, 2007; Huggins, 2011). Therefore, it seems to be a lack of a unified definition of KIBS due to the heterogeneous nature of these services.

Miles et al. (1995:18) defined KIBS as firms in which its economic activities are related to the creation, accumulation or dissemination of knowledge. Hertog (2000: 505) suggested KIBS as private firms who rely heavily on professional knowledge (knowledge or expertise related to a specific technical or functional domain) to provide intermediate products and services for other companies. Similarly, Bettencourt et al. (2002: 100-101) adopted the definition of Miles et al. (1995) and defined KIBS as “enterprises whose primary value-added activities are related to the accumulation, creation, or dissemination of knowledge” in order to develop a customized service or product solution to meet the customers’ requirement. Miles (2005) added that KIBS not

only provides knowledge-intensive inputs to the business processes of private organizations but also public sector clients.

As can be seen from the current literature, while KIBS firms are highly diverse, there are also several commonalities to characterize the main features of KIBS as the following:

Firstly, KIBS rely heavily on professional knowledge. Miles et al. (1995) implied that KIBS rely heavily on professional knowledge and their business activities are mostly related to the creation, accumulation or dissemination of knowledge. Specifically, Miles et al. (1995) suggested KIBS based its operation on knowledge or expertise related to a specific (technical) discipline or (technical) functional domain. Muller & Doloreux (2009) also insisted that knowledge is the main input to provide services for other organizations. As being highly dependent on knowledge resources, employees in KIBS firms are highly required to be equipped with knowledge expertise, particularly tacit knowledge to satisfactorily solve customers' problems. Therefore, this requirement critically influences the way KIBS firms are structured and managed (Hertog, 2000; Miles, 2005; Miles et al., 1995).

Secondly, knowledge is not only the input but also the output of KIBS performance. Miles (2005:39) suggested that the core competence of KIBS as the ability to combine their own tacit knowledge with their extensive experience, technical knowledge into a unique skeleton of knowledge in order to solve problems of other organizations. KIBS outputs include a high degree of intangible or tacit knowledge. Additionally, Strambach (2008) suggested that knowledge is not only the key production factor but also the output of KIBS. In contrast to manufacturing firms, KIBS outputs consist of a high degree of intangible or tacit knowledge. As a result, KIBS also adopt the role of "an interface between their clients' tacit knowledge base and the wider knowledge base of the economy" (Muller & Doloreux, 2009).

Furthermore, KIBS is seen as intermediary firms that provide knowledge-based products and services for their clients' production processes (Hertog, 2000; Miles et al., 1995). Additionally, they form a node in a network of customers, partners, R&D institutions and other establishments (Toivonen, 2004). This means that KIBS will have

an intensive interaction with a network of customers as their customer base includes business organizations, not individual consumers. The intense interaction between KIBS and their clients encompassed the whole process in which service is created and delivered to customers and has a critical influence on the service outcome as well as clients' satisfaction for further cooperation (Hertog, 2000). Accordingly, KIBS performance also depends on their customers' knowledge and capabilities to integrate in the interactive process. Additionally, Strambach (2008) demonstrated that the interaction between KIBS and their customers can vary differently according to the degree of customization. On the other hand, there are also pressures on KIBS to generalize their services provided for clients companies as customer concerns about high cost and uncertain quality. Consequently, some KIBS are increasingly looking for opportunities to standardize their services to benefit from the economies of scale by introducing co-modified products and services or modularizing service solutions to common problems (Hertog, 2000; Miles, 2005).

2.1.2. Classification of KIBS

Due to heterogeneous nature of KIBS, there have been many attempts to classify KIBS based on the type of the service they provide (Baláž, 2004; Koch & Strotmann, 2008; I. Miles et al., 1995; Rajala & Westerlund, 2005; M Toivonen, 2004). Specifically, Miles et al. (1995) divided KIBS into two major categories: the traditional professional services (P-KIBS) and new technology-based services (T-KIBS). The former one includes traditional professional services (such as consulting, business and management services, marketing, advertising, legal and accounting activities, market research etc...) while the latter using intensive technology such as IT-related services, engineering, and R&D consulting. Similarly, Baláž (2004) and Koch & Strotmann (2008) also listed main types of KIBS services.

In addition, Toivonen (2004) divided KIBS providers into three types as private companies operating on a profit basis (KIBS), public organizations (research and technology organizations – RTOs) that provide services without profit and hybrid forms between private-public and profit – non-profit services. However, Rajala &

Westerlund (2005) indicated that any form of KIBS can act on a profit or non-profit basis and added other forms of KIBS such as internal actors as provider of KIBS (a department within an organization) or collaborative strategic partners. Additionally, KIBS can be classified according to six significant roles of services as informative, diagnostic, advisory, facilitative, turnkey and managerial. The paper also implied that the increase of business network has lead to various types of KIBS suppliers and types of KIBS.

Sheehan & Stabell (2007) identified four key positioning characteristics of the KIBS through an extensive review of a variety of scholarly studies and various industries. These are the key value creating activity, the fee structure, the reputational capital, and the governance. The first one refers to the problem-solving activity (problem definition or solution formulation). The second aspect is related to the fee which is charged hourly or an established schedule of fee based on the ownership of the property rights. The third characteristic regards the reputational status of the company to attract clients, while the governance means the governance structure of the company as an independent organization, a partnership or an embedded department within a larger corporation. By applying these characteristics, Sheehan & Stabell (2007) identified three unique types of organizations: a diagnosis, search and design shop. As each type of KIBS will have distinctive characteristics, the paper also suggested that managers of KIBS should understand its own characteristics and plot rival's competitive positions to identify strategic opportunities. By changing one of four key positioning characteristics, managers can increase the competitive advantage of KIBS.

Nevertheless, many recent studies are often based on the classification of NACE scheme REV-2 2-digit level (the Statistical Classification of Economic Activities in the European Community) which is the European standard classification system. The following **Table 1** shows how KIBS are classified according to NACE scheme:

Knowledge based services	NACE Rev. 2 codes – 2-digit level	
Knowledge-intensive services (KIS)	50 to 51	Water transport; Air transport;
	58 to 63	Publishing activities; Motion picture, video and television programme production, sound recording and music publish activities; Programming and broadcasting activities; Telecommunications; computer programming, consultancy and related activities; Information service activities (section J);
	64 to 66	Financial and insurance activities (section K);
	69 to 75	Legal and accounting activities; Activities of head offices, management consultancy activities; Architectural and engineering activities, technical testing and analysis; Scientific research and development; Advertising and market research; Other professional, scientific and technical activities; Veterinary activities (section M);
	78	Employment activities;
	80	Security and investigation activities;
	84 to 93	Public administration and defence, compulsory social security (section O); Education (section P), Human health and social work activities (section Q); Arts, entertainment and recreation (section R).
Knowledge-intensive market services (excluding high-tech and financial services)	50 to 51	Water transport; Air transport;
	69 to 71	Legal and accounting activities; Activities of head offices, management consultancy activities; Architectural and engineering activities, technical testing and analysis;
	73 to 74	Advertising and market research; Other professional, scientific and technical activities;
	78	Employment activities;
	80	Security and investigation activities;
High-tech knowledge-intensive services	59 to 63	Motion picture, video and television programme production, sound recording and music publish activities; Programming and broadcasting activities; Telecommunications; computer programming, consultancy and related activities; Information service activities;
	72	Scientific research and development;
Knowledge-intensive financial services	64 to 66	Financial and insurance activities (section K).
Other knowledge-intensive services	58	Publishing activities;
	75	Veterinary activities;
	84 to 93	Public administration and defence, compulsory social security (section O); Education (section P), Human health and social work activities (section Q); Arts, entertainment and recreation (section R).

Table 1: Aggregation of services based on NACE Rev.2

Also applying the NACE classification, Miles (2005) summarized and specified major KIBS sectors as the following table:

Box 1 Major KIBS sectors

NACE Division 72: Computer and related activities

72.1: Hardware consultancy; 72.2: Software consultancy and supply; 72.3: Data processing; 72.4: Database activities; 72.5: Maintenance and repair of office, accounting and computing machinery; 72.6: Other computer related activities

NACE Division 73: Research and experimental development

73.1: Research and experimental development on natural sciences and engineering; 73.2: Research and experimental development on social sciences and humanities

NACE Division 74: Other business activities

74.11: Legal activities; 74.12: Accounting, book-keeping and auditing activities; tax consultancy; 74.13: Market research and public opinion polling; 74.14: Business and management consultancy activities; 74.15: Management activities of holding companies; 74.20: Architectural and engineering activities and related technical consultancy; 74.3: Technical testing and analysis; 74.4: Advertising; 74.5: Labour recruitment and provision of personnel; 74.8: Miscellaneous business activities n.e.c.; 74.81: Photographic activities; 74.84: Other business activities n.e.c.

Note: the broad divisions here include some subsectors that are probably not strictly KIBS. Thus the following have been omitted from the list: 74.6 (Investigation and security activities); 74.7 (Industrial cleaning); 74.82 (Packaging activities); 74.83 (Secretarial and translation activities).

NACE 71, excluded from the list above, involves Renting of Machinery and Equipment: it is often grouped together with these sectors (and in turn, these are also often aggregated together with "real estate", and then in turn this group with "financial intermediation" for purposes of statistical analysis.

Box 1: Main KIBS - NACE 70-74 (Miles, 2005)

The literature review has not clearly distinguished the differences among professional services, KIBS and customer solution. According to Miles et al. (1995), professional services are part of KIBS as traditional professional services (P-KIBS) in compared with another group (T-KIBS) which are highly technology-based. Løwendahl, (2005) also defined professional services as services which are knowledge-intensive and have a high degree of customization as well as substantial interaction with clients. However, the only difference is that if KIBS customers are defined as businesses and organizations, not produced for private consumption (Miles, 2005; Miles et al., 1995; Muller & Doloreux, 2009), professional services are provided to both businesses and individuals (Løwendahl, 2005). However, existing literature has little to say about customer base of KIBS and professional services (Von Nordenflycht, 2010). Therefore, the distinction between PSF and KIBS is hindered by the ambiguity of the terms.

In addition, many studies on KIBS (Aarikka-Stenroos & Jaakkola, 2012; Kohtamäki & Partanen, 2016) also use references of studies on business solution or customer solution (Petri & Jacob, 2016; Tuli et al., 2007). Customer solution has been defined as "a customized and integrated combination of goods and services for meeting a customer's business needs" (Davies, Brady, & Hobday, 2006; Sawhney, 2004). Although both

KIBS and customer solution have been variously conceptualized in the literature, the distinction between these services has not been identified. These terms are usually mixed and findings of studies on professional services and business solutions also contribute to research on KIBS as well. Therefore, several studies on solution business (Petri & Jacob, 2016; Tuli et al., 2007) are also used as references for this study.

2.2. The concept of Value

The most recent transition from goods-dominant towards service-dominant logic has critically transformed the view of value in the literature (Heinola, 2012; Vargo & Lusch, 2004; Vargo, Maglio, & Akaka, 2008). In goods-dominant approach, value refers to value-in-exchange, which means that value is created solely by the seller and then delivered to the market (Vargo et al., 2008). However, from the customer's perspective, value is created only when the offering is used by the customer as "value-in-use" (Grönroos, 2008a, 2011; Normann & Ramírez, 1993; Vargo & Lusch, 2008). The value of an offering will be determined by an individual customer's perception and experiences (Eggert & Ulaga, 2002). Customers often perceive value as the trade-off between the benefits and the sacrifices in a supplier's offering (Ulaga & Eggert, 2005; Woodruff, 1997). The perceived benefits can be a function of the product performance and design or the quality of services, the staff who deliver it, the image of company's brand while the sacrifices customer pay for the good or service can extend beyond money include time and efforts (Bolton & Drew, 1991; Zeithaml, 1988). Therefore, an optimal offer for a customer can be achieved if it can balance the perceived benefits and the required sacrifices.

In some contexts when service offering is complex, suppliers can engage in extensive interaction with the customers, actively impact the value perception of customers and then influence the customer's value creation process (Grönroos, 2008a, 2011). Therefore, value is then generated not only through the use of the offering by a customer but also be affected by the relationship and interactions between customers and suppliers. The involvement of supplier and customer in the service creation has been recently studied in the literature. The literature largely agrees that value is co-

created by the customer and the supplier (Grönroos, 2008a, 2011, Vargo & Lusch, 2004, 2008).

Additionally, there is an increased focus on the concept of “relationship value”, which means that the buyer and supplier firm do not only do business with each other due to the value of the good or service being exchanged but also relations with suppliers even this capability is not reflected in the service offering (Lindgreen & Wynstra, 2005). Managers often put a lot of efforts on maintaining and developing long-term relationships, networks and interactions internally (with the organization’s employees) and externally (with customers, suppliers, and other influence markets). Value is created within these interactions, relationships and networks. Therefore, the firm should consider all the interactions that can create value in any given customer relationship. Similarly, Walter, Ritter, & Gemuden (2001) also understand value as a trade-off between multiple benefits and sacrifices which are resulted from the focal relationship (buyer-seller) as well as other connected relationships that have impacts on or are influenced by.

Normann & Ramírez (1993) also suggested that creating value activity should involve different economic actors as suppliers, business partners, allies and customers to work together to co-produce value. “The secret of value creation is building a better and better fit between relationships and knowledge” (Normann & Ramírez, 1993:69). On another way, it means that reconfiguration of roles and relationships among a constellation of actors are critical to reinvent or maximize the value created. In business-to-business markets, value is not only a dyadic issue as downstream and upstream actors in the supply chain can have impacts on this value (Lindgreen & Wynstra, 2005).

In highly competitive business environment, there is an increasing demand for complex exchange services such as high tech product development, tailored technology solutions designs, management consulting as well as market research, research and development which are often named as professional services or knowledge-intensive business services (KIBS). Knowledge-intensive business service has recently become one of service sectors the literature has focused on to understand how value is co-created as

this sector requires tacit knowledge needs to be explicated and combined to guarantee the success of outcome.

2.3. Value creation in KIBS

2.3.1. The traditional approach in value creation

The traditional approach of value creation often assumed that value creation occurred inside the firm (Prahalad & Ramaswamy, 2004). The concept of value chain was introduced by Porter (1980) suggested that value is created through the firm's activities. A typical value chain often consists of primary activities such as inbound logistics, operation, outbound logistics, marketing & sales, service and supporting activities that include infrastructure planning, human resource management, research and development (R&D), and procurement. Value is created through a chain of activities and the way activities are linked and connected in a value chain can determine the total value a company created for its customers (Porter, 1980, 1985).

Although Porter implied that the value chain model can be applied to all industries, many studies criticized that Porter's value chain is more suitable for manufacturing firms instead of service companies (Stabell & Fjeldstad, 1998). The reason is that the value chain model is a lack of interaction between customer and supplier while service typically requires a lot of customer involvement in creating and delivering value, especially knowledge-intensive business services. Secondly, the degree of customization and intangibility which are very important in KIBS services are not mentioned in value chain analysis. Therefore, Porter Value chain analysis is more functional in the context of manufacturing companies instead of knowledge-intensive service firms.

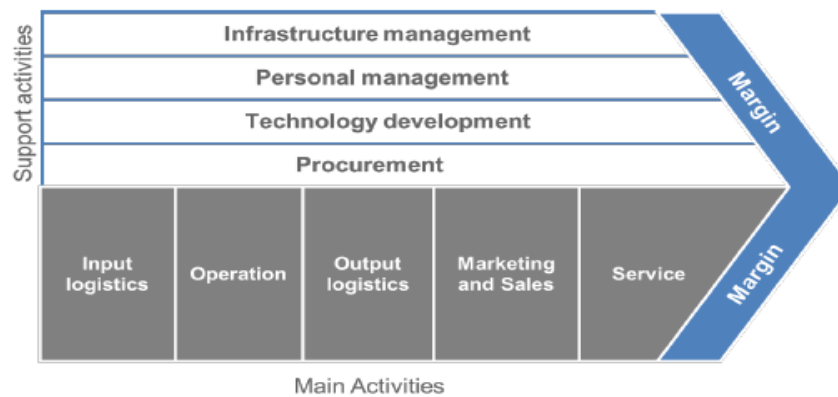


Figure 2: Value chain by Porter (1980)

In this traditional approach, the firm and the customer have distinct roles as production and consumption respectively. The firm will solely create value, which is exchanged in the market and customer is demand target for company's offering (Prahalad & Ramaswamy, 2004) as Figure 3.

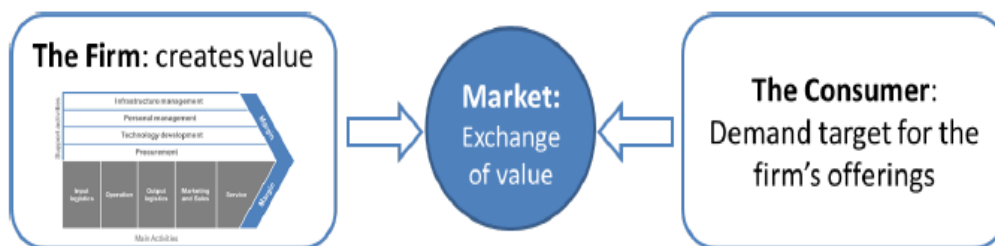


Figure 3: Traditional value creation process (Prahalad & Ramaswamy, 2004)

This approach implied that firms will decide what value to their customers is and customers have little or no role in value creation. However, this approach cannot be applied in service design when this kind of 'product' requires interactions between customer and supplier. The introduction of service dominant logic has transformed the value creation concept, which assumed that value is created only when the offering is consumed by the customer as "value-in-use" (Vargo & Lusch, 2004). Vargo and Lusch (2008:7) even stated that consumer is always a co-creator of value in service-dominant logic. Therefore, value co-creation is more appropriate for service companies rather than the traditional approach or value chain model.

2.3.2. Value creation process as a co-creation

When studying the value aspect, some concepts as “value creation” and “value production” or “value generation” are introduced to differentiate the nature of these processes. Based on the value-in-use notion which suggested that value is created by customer during the use of goods and services, *value creation* happen in the customer’s value-creating processes (Grönroos, 2011) while *value production* which refers to developing, designing, manufacturing and delivering takes place in the supplier’s sphere and is considered as part of the entire process of value generation (Figure 4). According to the customer perspective, suppliers cannot create value as value is only created when customers consuming the product or service. Suppliers act as a value facilitator who provided customers with resources through an interactive process to facilitate customer’s value creating process. Through interactions with customers, suppliers can get opportunities to become value co-creators with their customers (Grönroos, 2011). From the latter perspective, interactions are joint production processes, in which the customer taking part in as co-producer with the supplier (Grönroos, 2008a, 2011).

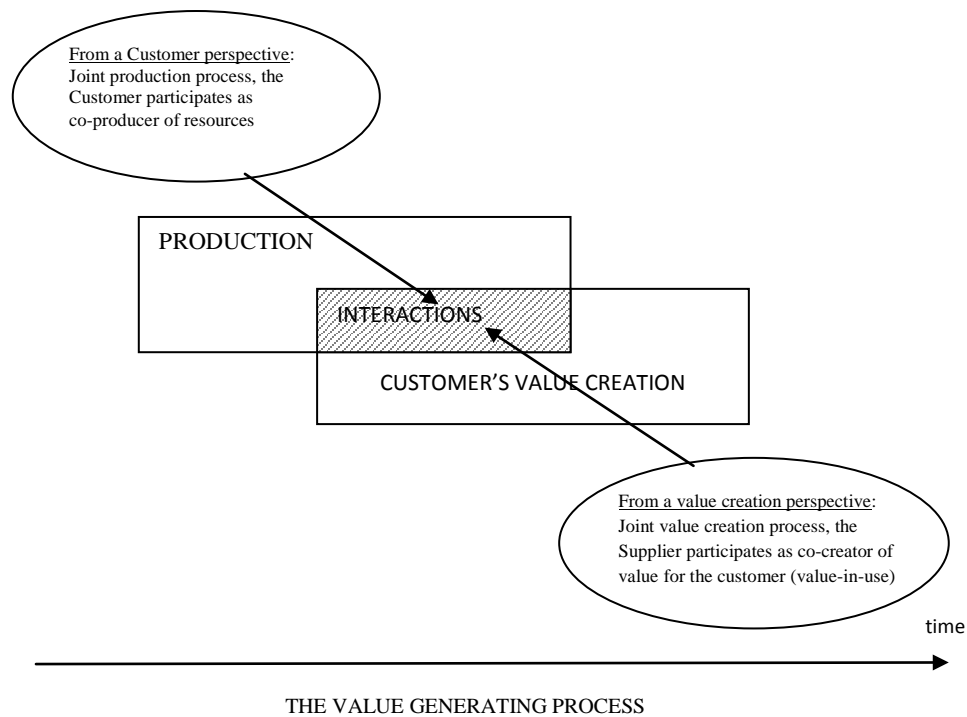


Figure 4: Value creation and the phases of value generating process (Grönroos, 2011)

However, recently studies on value co-creation implied that this process should not be viewed from separated customer or supplier perspective as value is generated through the process of exchange and is impacted by the relationship and interactions between supplier and customers (Grönroos & Voima, 2013; Payne et al., 2008; Vargo et al., 2008). The service-dominant logic has considered that value is typically co-created by interactions between supplier and customers through integration of resources and competences (Vargo & Lusch, 2008). Grönroos & Voima (2013) defined value co-creation as a joint process in which the supplier firm and the customer engage in to create value through interactions and value co-creation occurs specifically in “joint value spheres” between suppliers and customers. Similarly, value co-creation is conceptualized as a joint problem-solving process which involves supplier and customer resources integrated into a collaborative interaction process (Aarikka-Stenroos & Jaakkola, 2012). Suppliers can apply their specialized professional skills, knowledge and expertise in a special field while customers also contribute needed resources such as knowledge and information to create optimal value outcome. This study also applies the concept of value co-creation as a joint process between customer and supplier in which both parties integrate their resources as skills and knowledge to enhance the value created from the service offering for customer.

Ballantyne & Varey (2006) suggested a triangulated model on three exchange-based activities for co-creating value as an elaboration of the service-dominant logic (Vargo & Lusch, 2004). The model consists of three main activities: knowledge renewal, relationship development and communication. Three activities are interrelated as: relationships base as a structural support for knowledge exchange and development, effective communication to develop these relationships and knowledge required to solve customer problem and improve service quality. In all forms of communicating, dialogue is considered as the most advanced form of marketing communication as it operates as an interactive process of learning together (Ballantyne, 2004). In the value co-creation, all interactions are considered as part of relationship development which are essential for sustaining further value co-creation opportunities. Dialogue will support knowledge development within an organization and among companies, enable co-creation of unknown knowledge positions. Knowledge sharing depends on the willingness of actors engage in the process and pass on their tacit knowledge. The model can be considered as basis to understand the nature of value co-creation activities in the service context.

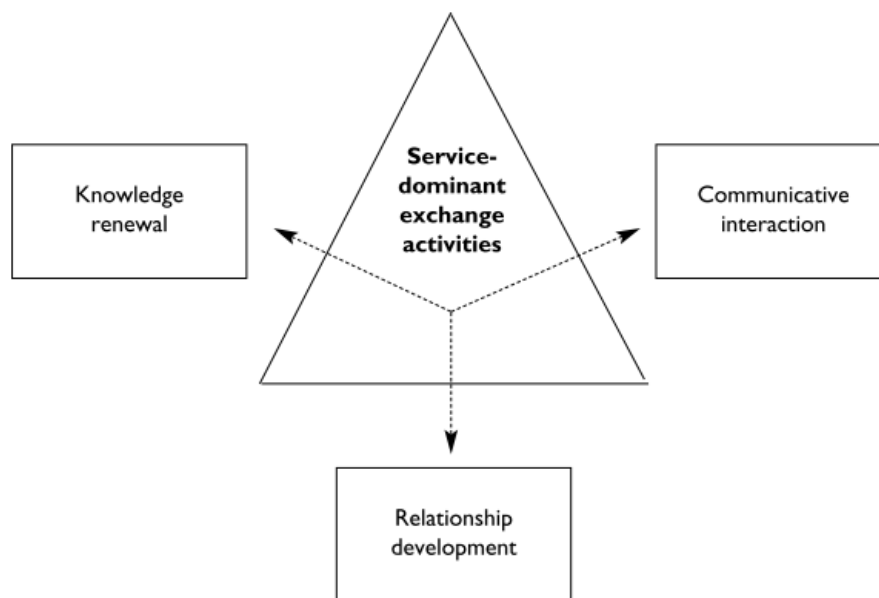


Figure 5: The triangulated model of value-creating activities (Ballantyne & Varey, 2006)

Payne et al. (2008) proposed a process-based value co-creation framework consists of three main components: customer value-creating processes, supplier value-creating processes and encounter processes. In a B2B relationship, customer value-creating processes refer to all processes and activities that take place on the sphere of customer organization to manage its business. Supplier processes are related to all processes and activities which supplier uses to manage its business and its relationships with customers or other stakeholders. Encounter processes refer to all interactions and exchange between customer and supplier which need to be managed to develop successful value co-creation.

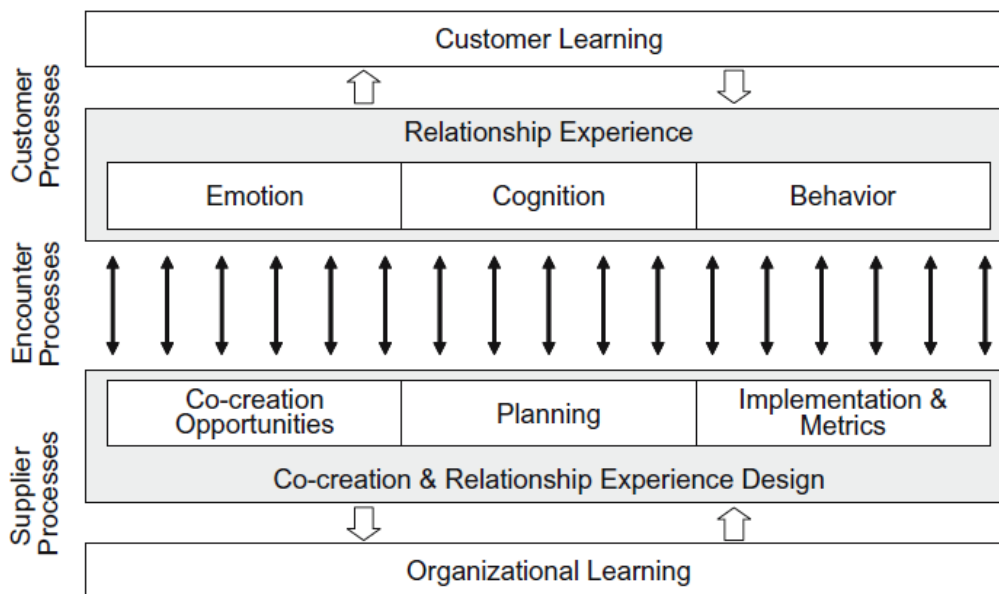


Figure 6: A conceptual framework for value co-creation (Payne et al. 2008)

This framework considers the value co-creation process as a learning process in which customer engagement in a learning process based on the experience that customer has during the relationship and this learning process will have an impact on how the customer engages in future value co-creation activities with the supplier. Similarly, the supplier also engages in the learning process as organization learning: supplier learns more about the customer, customer's business and has more opportunities to improve the relationship experience and enhance the value co-creation with customers (Payne et al. 2008). Three elements of the relationship experience in customer processes are

cognition, emotions and behavior. These elements will impact what customer think, feel and do as an integral part of their role in value co-creation. On the supplier side, supplier processes include: review of co-creation opportunities, planning, testing and prototyping value co-creation opportunities; implementing customer solutions and managing customer encounters; and developing metrics to evaluate whether value propositions make customers satisfy or not. The model provided an integrative mapping technique of customer, supplier and encounter processes to highlight co-creation opportunities, recognize failure points and improve service quality. However, the model focused mainly on firms in business-to-customer market and has not been tested in professional service or knowledge-intensive business services where service is more complex and requires a high level of customer interaction and customization.

In general, the literature asserted that value creation in service context is considered as a value co-creation process in which service supplier and customer interact, communicate and integrate resources to enhance value of the outcome. The above conceptualized models on value co-creation process act as a basis to understand the key activities in value co-creation process as well as the interactions among suppliers and customers.

2.3.3. Value co-creation in KIBS

Value co-creation is increasingly evident in KIBS context (Aarikka-Stenroos & Jaakkola, 2012; Bettencourt et al., 2002; Kohtamäki & Partanen, 2016; Santos & Spring, 2015) as such services require an intensive integration of knowledge-based resources and the information asymmetry between customers and suppliers (Aarikka-Stenroos & Jaakkola, 2012; Kohtamäki & Partanen, 2016). The complexity and information asymmetry in KIBS challenge both the supplier and the customer. Specifically, the supplier's high specialization can create disequilibrium of expertise and experience between the customer and the professional while the customer may have a limited understanding of their needs and depend on the supplier to diagnose the problem (Kohtamäki & Partanen, 2016). On the other hand, customers can possess knowledge needed for the problem-solving process such as their business information, market insight, and project objectives (Aarikka-Stenroos & Jaakkola, 2012). Therefore,

it is difficult for the supplier to communicate the value proposition in advance and manage the service process to obtain the best outcome. From the customer perspective, customer might find it difficult to evaluate the value potential of the service outcome.

Value co-creation in the context of knowledge-intensive business services has been recently studied in the literature (Aarikka-Stenroos & Jaakkola, 2012; Bettencourt et al., 2002; Heinola, 2012; Kohtamäki & Partanen, 2016; Petri & Jacob, 2016). The existing studies emphasized the involvement of customer in value co-creation process, such as the important role of communication (Bettencourt et al., 2002) and joint problem solving (Aarikka-Stenroos & Jaakkola, 2012). Bettencourt et al. (2002) conducted a job analysis on clients' responsibility to clarify client's role for an effective client co-production in KIBS partnership. Therefore, it is necessary to manage client co-production behaviors. Managing customers' co-production behaviors positively affect the role clarity, motivation, knowledge, skills and abilities of client partners and thereby increase project success and client satisfaction as well as enhance competitiveness for KIBS firm.

Some other studies clarified the role of both the service provider and customer in the value co-creation of knowledge-intensive business services (Aarikka-Stenroos & Jaakkola, 2012; Heinola, 2012). The supplier's role responsibilities consist of building trust and mutual value through value leadership, expertise and solidarity while the most relevant role responsibilities of customers were found to be involving and being involved (Heinola, 2012). More specifically, a supplier may facilitate value creation via the roles of value option advisor, value process organizer, value amplifier and value experience supporter while customers can impact the value proposition by adopting the role of co-diagnoser, co-designer, co-producer and co-implementor (Aarikka-Stenroos & Jaakkola, 2012).

Supporting the opinion of Payne et al. (2008) that value co-creation process is regarded as a learning process, Miles et al. (1995) highlighted the aspect of learning in value co-creation as supplier learning about customer's business and requirements and client learning about the service supplier's routines and capabilities. KIBS and customer engage in "a learning process through networking" (Miles et al., 1995). Similarly, Kohtamäki & Partanen (2016) adopted the concept of relationship learning suggested by

Seines & Sallis (2003) to explain the role of learning in the relationship between KIBS and its customer. Relationship learning is conceptualized as the joint activity between supplier and customer in which two parties share information which is then jointly interpreted and integrated into a shared relationship-domain specific memory (Seines & Sallis, 2003). The value co-creation process requires relationship learning as knowledge sharing, joint sense-making, knowledge integration to facilitate interactions and knowledge integration between customer and supplier. Through these knowledge-sharing interactions, relationship learning enhances KIBS's understanding of customers' requirement, increase the degree of customization and facilitate the co-creation of customer and supplier in KIBS's offering (Kohtamäki & Partanen, 2016). Through relationship learning, both customer and supplier find ways to reduce redundant costs, enhance quality and reliability and increase speed and flexibility (Dyer & Singh, 1998).

On the other hand, Greer (2015) suggested customer involvement in KIBS's value creation process can present both threat and opportunity to KIBS firm. Customers who take part in a co-creation process probably create a greater amount of value for this kind of service than clients without this ability and invest less input into this process. Nevertheless, knowledge-intensive business services typically require a certain level of quality and quantity of customer involvement and thereby KIBS firm can expose to higher risk when the client participation is not needed. KIBS are characterized by the complexity, heterogeneity, expertise knowledge and a high level of uncertainty will hinder the value co-creation (Aarikka-Stenroos & Jaakkola, 2012; Greer, 2015).

2.3.4. Structure of value co-creation process in KIBS

Literature focusing on KIBS's sequential processes describes the problem-solving process in knowledge-intensive business services as complex and time consuming (Lindberg & Nordin, 2008; Tuli et al., 2007). Tuli et al. (2007) indicated that value co-creation is considered as a customer-supplier relational process comprising four main activities: (1) customer requirements definition, (2) customization and integration of goods and services; (3) deployment and (4) post-deployment customer support. Both supplier and customer can have an impact on the effectiveness of a solution through

supplier variables and customer variables. Supplier variables consist of contingent hierarchy, documentation emphasis, incentive externality, customer interactor stability and process articulation. Customer variables are adaptiveness to supplier offerings and political and operational counselling that provided to a supplier.

Similarly, Kukk et al. (2014) also suggested that the process of value creation in KIBS according to customer's perspective basically includes four phases such as identification of the problem, optimal service solution, execution of offering and implementation and exploitation.



Figure 7: Value co-creation process (Kukk et al., 2014)

Also based on a four-stage collaborative process from both customer and supplier perspective, Aarikka-Stenroos & Jaakkola (2012) suggested a detailed framework describing value co-creation through a dyadic problem solving process encompassing five key activities such as: diagnosing needs, designing and producing solutions, organizing process and resources, managing value conflicts and implementing the solution. The framework also determines critical resources and roles for suppliers and customers in value co-creation process. Aarikka-Stenroos & Jaakkola (2012) find comparable steps to Tuli et al. (2007) but add two more activities as managing value conflict and organizing the process and resources to ensure smooth interaction between the parties and integrate relevant resources to make value creation possible. However, in contrast with Tuli et al. (2007) which considered the value creation process as a linear fashion, Aarikka-Stenroos & Jaakkola (2012) indicate that the activities may occur in parallel or in diverse order.

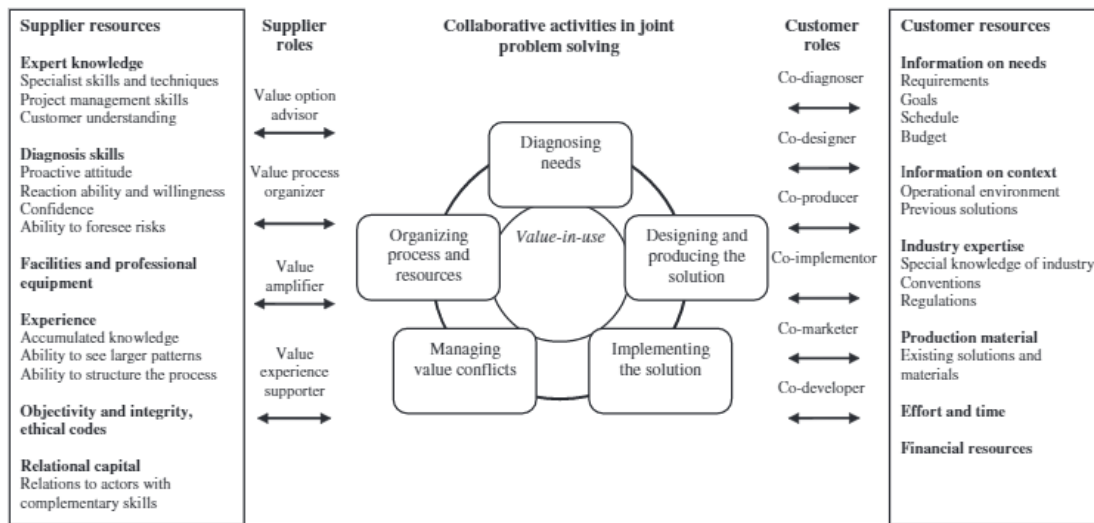


Figure 8: Joint problem solving as value co-creation in knowledge intensive services (Aarikka-Stenroos & Jaakkola, 2012)

The value co-creation process generally begins with identification of customer's need and requirements. In this activity, the responsibility of the supplier is to identify what customers really need by using their specialist knowledge and experience. Customer may have limited understanding of their needs and therefore they need to ask for expertise from the external service provider. However, customer also possesses critical information that is a prerequisite for the initial diagnosis such as customer's needs, market insight, solution's objectives, budget, schedule and business context and need to clearly articulate this information to the supplier (Aarikka-Stenroos & Jaakkola 2012). There are also inexperienced customers who are not active in providing necessary information or not sufficiently knowledgeable to identify their own problems. Therefore, it is very important for a supplier to be active in proposing the diagnosis and assist its customers.

In the stage of solution formulation and implementation, the main responsibility belongs to the supplier and customer seems to have less involvement. Supplier often acts as a value option advisor to assist customers in making a choice of appropriate solution and a value process organizer to actively solve customers' problem. However, experienced customer can adopt the role of "equal partners than followers" also contribute to the process as a co-producer and co-designer of the problem solution by applying their

industry knowledge. Organizing process and resources refers to indentifying and integrating all necessary resources and structuring all these in an appropriate way to address customers' problem. As customer always feels insecure about information they provided and usability of their resources in problem solving, it is necessary to have a clear procedure and motivation for customers to integrate their resources. Besides, managing conflict requires open discussions between two parties on the issues and their effect on the value potential.

As can be seen from this framework, both supplier and customer play a critical role in the problem-solving process. They both get involved and integrate their resources in value co-creation process to optimize the value-in-use. Especially, customer can have considerable influence on the value proposition of service provider by the contribution of their own resources and involvement in value co-creation process. Additionally, although many studies see structure of value co-creation process of KIBS in different ways, they all share the common view that these activities do not follow a linear fashion, can be parallel or iterative as one activity can relaunch when a problem is defined or disagreements occur, the activities may occur in parallel and in diverse order (Aarikka-Stenroos & Jaakkola, 2012). The problem solving process in KIBS is iterative and cyclical, it can be interrupted and adjusted at any stage as new problem is defined and solution get refined (Woiceshyn & Falkenberg, 2008).

Despite these differences, the proposed structures basically agree that knowledge-intensive business service is developed and solved through co-creation with the customer. Based on the literature review about value creation and value co-creation process in the context of knowledge-intensive business service, the following table will summarize important findings what have been identified in previous studies:

Studies	Structure of value co-creation in KIBS/ The role of customer and supplier in value creation process
Ballantyne & Varey (2006)	A triangulated view of value-creating activities among suppliers and customers: knowing, relating and communicating.
Tuli et al. (2007)	A customer-supplier relational process comprising four main activities: (1) customer requirements definition, (2) customization and integration of goods and services; (3) deployment and (4) post-deployment customer support.
Woiceshyn & Falkenberg (2008)	Value creation is seen as a problem solving process in KIBS which is iterative and cyclical, it can be interrupted and adjusted at any stage; Include five stages of value shop model: problem finding and identification, problem solving, choice of solution, execution and control/evaluation.
Payne et al. (2008)	A value co-creation framework consists of three main components: customer value-creating processes, supplier value-creating processes and encounter processes.
Heinola (2012)	<p>Role of supplier: building trust and mutual value through value leadership, expertise and solidarity</p> <p>Role of customer: be involving and being involved.</p>
Aarikka-Stenroos & Jaakkola (2012)	<p>Collaborative process includes four stages: problem identification, solution, implementation and value-in-use</p> <p>Five key activities: diagnosing needs, designing and producing solutions, organizing process and resources, managing value conflicts and implementing the solution. The value co-creation is not a linear process</p> <p>Role of supplier: value option advisor, value process organizer, value amplifier and value experience supporter</p> <p>Role of customers: co-diagnoser, co-designer, co-producer and co-implementor.</p>
Kukk et al. (2014)	Co-value creation process from customer perspective: four phases: identification of the problem, optimal service solution, execution of offering and implementation and exploitation.

Table 2: Summary of value co-creation structure

2.4. Resources and capabilities of KIBS firms for value co-creation

In service dominant logic, knowledge is considered as the fundamental source of competitive advantage (Vargo & Lusch, 2004). In this approach, people exchange to obtain benefits from specialized competencies as knowledge and skills. In other words, knowledge such as human skills, competencies, and accumulated work experience play an important role in service supplier's performance (Vargo & Lusch, 2004). Nonaka & Takeuchi (1996) suggested that knowledge can exist in two forms as tacit knowledge and explicit knowledge. Explicit knowledge which can be seen in common forms of technical specifications, documents, procedures which can be relatively easy to be codified, stored and transferred. Tacit knowledge is employee's know-how and competencies which are accumulated through self-development, experience, observation and imitation. Tacit knowledge as ideas, experience is highly personal and difficult to access, convert or transfer. Especially it is resulted from learning process in which employees work to achieve cost efficiencies or collaborating with suppliers or customers to enhance value for customers. Supporting Vargo & Lusch (2004), Ballantyne & Varey (2006) highlights the ability to renew knowledge, especially tacit knowledge in service development. Knowledge renewal process requires willingness of actors (suppliers, customers or employees) to take part in and pass on their knowledge, especially tacit knowledge.

As KIBS firms rely heavily on professional knowledge and they use knowledge to produce intermediate services for their clients (Muller & Doloreux, 2009), many studies highlight the importance of knowledge resources such as expert knowledge, competences and human resources in relation to the demands of its clients and competition in a business. Besides, the resource-based view and an extended approach as knowledge-based view have been largely used in the literature as contemporary approaches to identify KIBS firm's resources and capabilities needed for value co-creation (Haataja & Okkonen, 2004; Kohtamäki & Partanen, 2016; Woiceshyn & Falkenberg, 2008). Woiceshyn & Falkenberg (2008) stated that knowledge and skills of the human resources, networks, technical systems and managerial systems are main resources firms require to solve problems. Similarly, vital competitiveness factors

consist of knowledge, competences, skills, professional skills, network, R&D function, and innovations (Haataja & Okkonen, 2004).

Some other studies focused on the concept of Intellectual Capital introduced by Stewart (1997) to explore components of intellectual assets for the competitiveness of knowledge-intensive organizations (Khan, 2014; Vermeulen, 2013). Intellectual capital is recognized as the most important asset for the survival of knowledge intensive organizations (Kianto, Hurmelinna Laukkanen, & Ritala, 2010). Intellectual capital is typically divided into three categories such as human capital, structural capital and customer capital (Stewart, 1997; Vermeulen, 2013). Human capital, which refers to employees' knowledge, competencies, capabilities and experience of employees is often considered as the most important resource of an organization to achieve sustainable competitive advantage (Khan, 2014). Organization capital includes all software, systems, procedures and organization structure that create the strength and cohesion between people and processes (Huggins & Weir, 2012). Organization capital can support the transformation of individual tacit knowledge into firm owned knowledge. Besides, network capital consists of all relationships which can be contractual agreements as well as non-formalized relationships with customers, suppliers and partners. In other words, it is related to the management and investment in relationships external to the firm, through which "they gain access to knowledge to increase expected economic returns" (Huggins, 2010). The development, accumulation and utilization of these intellectual assets vary considerably according to the size and type of KIBS firm (Huggins & Weir, 2012).

Differences in these approaches impact on the development of effective innovation processes, with resource deficiencies in smaller firms constraining their innovation capability. Additionally, Vermeulen (2013) conceded that intellectual capital is necessary but not sufficient to sustain performance. Managers in KIBS firms should consider innovation capabilities to continually adapt their services in a highly changing environment and maximize the contribution of intellectual capital to the performance of KIBS firms.

Using the value shop model approach introduced by Stabell & Fjeldstad (1998), Woiceshyn & Falkenberg (2008) found that it is important to align resources of KIBS

firm into bundles to match the type of problem being solved and the firm's strategy to enhance value creation. The value creation of KIBS firms cannot be optimized efficiently or effectively if it merely recruits the best staff without combining knowledge sharing, active nurturing of network resources and supportive managerial and technical systems that the company has established (Stabell & Fjeldstad, 1998).

However, many studies have criticized that the resource-based view (RBV) considered the organization is quite internal and static, and strategic decisions based on RBV is always made afterward (Haataja & Okkonen, 2004). RBV focused mainly on decision making and managerial skills ignoring changes in the external environment that require learning and innovation in the organization. The literature recently has adopted a more dynamic approach to identify dynamic capabilities through which firms integrate, build and reconfigure their resources as the principal source of sustainable competitive advantage. Hertog, Der Aa and Jong (2010) utilized the dynamic capability view to conceptualize six service innovation capabilities: signalling user needs and technological options, conceptualizing, bundling, coproducing and orchestrating, scaling and stretching, learning and adapting.

As customers always expect how KIBS services can support their entire business, KIBS firms have to be more proactive in examining co-creation opportunities - solutions they can provide to solve customers' problem (Marja Toivonen, 2004). KIBS firms have to understand the clients' business as well as their own specialized knowledge bases in order to provide integrated solutions to their customers' problems and enhance service offering's value.

Additionally, the triangulated view of value-creating activities also implied that besides the ability to renew knowledge, service firms need to build up relationships through interactions with customers as relationships facilitate the creation and application of knowledge resources (Ballantyne & Varey, 2006). Additionally, communicating skills support co-creation of value and useful in acquiring knowledge development within and between firms. Three capabilities are interrelated and support each other: relationship is foundation for the creation and dissemination of knowledge resources, communicative interactions as dialogue develop these relationship and knowledge renewal needed to improve value-in-use for customers.

The importance of learning capability in the service context, particularly in KIBS has been widely acknowledged by scholars in the field (Grönroos & Voima, 2013; Miles et al., 1995; Payne et al., 2008). Miles et al. (1995:26) suggested learning capability as an important capability for KIBS as “KIBS involves learning through networking, rather than networking alone”. In order to gain competitive advantage, knowledge is needed to be shared and obtained from the firm’s accumulated experience in interacting with external parties as customers, suppliers and partners. Similarly, Kohtamäki & Partanen (2016) investigated the impact of relationship learning on value co-creation process of KIBS manufacturing firms. Relationship learning is defined as “a joint activity between customer and service supplier in which both parties share information then jointly interpreted and integrated into a shared relationship domain-specific memory” (Seines & Sallis, 2003). Through communications and knowledge-sharing activities with customers, relationship learning can enhance suppliers’ understanding of their customers’ demand, improve quality service and better co-create value with customers (Kohtamäki & Partanen, 2016). This finding also supports the view of Payne et al. (2008) who argued that value co-creation process as a learning process of customer and supplier and “relationship learning” results from encountering processes of value co-creation. For that reason, KIBS with learning capability can acquire new knowledge, enhance the problem-solving ability and strengthen their competences.

In summary, the literature review on resources and capabilities of service firms, especially in the context of knowledge-intensive business services has highlighted the importance of knowledge as the main input for firm’s value creating activities. Related-knowledge resources have been identified as technical skills, specialized knowledge, competencies of human resources, technology or know-how practices that are embedded in the company’s process. Besides, skills and capabilities such as communication skills, developing relationship (network capability) and learning capability (knowledge renewal capability, knowledge sharing) are also identified for better improving value of co-creation process. The following table will summarize all significant findings in the literature related to key resources and capabilities of suppliers in value co-creation process:

Studies	Key resources and capabilities
Haataja & Okkonen (2004)	Knowledge, competences, skills, professional skills, network, R&D function, and innovations
Woiceshyn & Falkenberg (2008)	Knowledge and skills of the human resources, networks, technical systems and managerial systems; the importance is matching the type of problem being solved and the firm's economic logic
Ballantyne & Varey (2006)	Three capabilities related to three key value creating activities as relational capability, communication capability and knowledge renewal capability
Huggins & Weir (2012); Khan (2014); Vermeulen (2013)	Intellectual assets as human capital, structural capital and customer capital. The development, accumulation and utilization of these intellectual assets will vary considerably according to the size and type of KIBS firm Innovation capabilities for sustainable competitive advantage
Kohtamäki & Partanen, (2016); Miles et al., (1995); Payne et al., (2008)	Learning capability through networking Relationship learning capabilities such as knowledge sharing, joint sense-making and relation-specific knowledge integration are very important to create value for both customers and suppliers in KIBS context

Table 3: Summary of key resources and capabilities in service context and KIBS

2.5. A synthesis of the literature review

Synthesizing literature review of value co-creation in service dominant logic as well as KIBS, Figure 6 presents a tentative model as a basis for understanding and designing the value co-creation process in the context of KIBS:

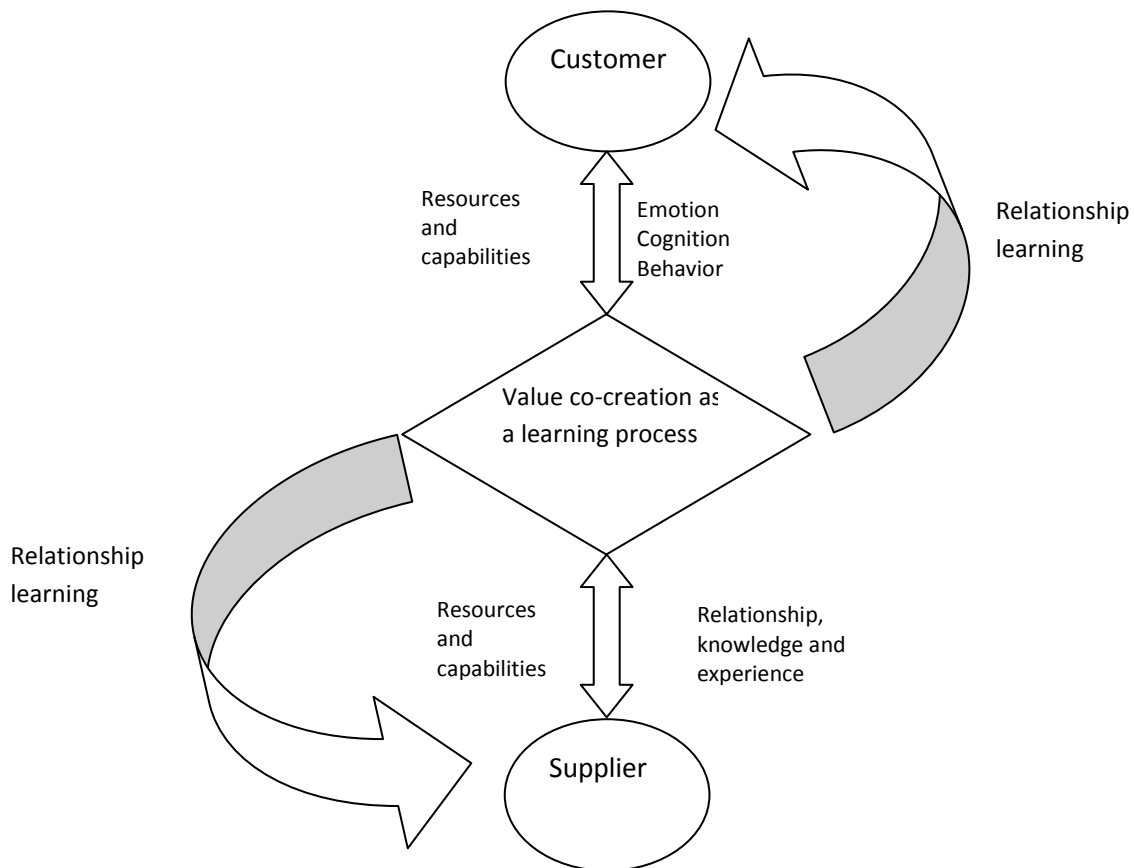


Figure 9: A tentative model for value co-creation process

This model based on the value co-creation model suggested by Payne et al. (2008) combined with the joint problem-solving process by Aarikka-Stenroos & Jaakkola (2012). This model presents a joint process in which KIBS and its customer engage in the value co-creation through integrating resources and capabilities to optimize the value-in-use. The main resources of the supplier side contributed to the co-creation are expert knowledge and skills, professional equipment and systems, accumulated experience and relational capital. On the customer side, they possess critical information such as requirements, industry expertise, production material, efforts and time (Aarikka-Stenroos & Jaakkola, 2012). The interactions between KIBS and its clients are based on

three key value creating activities as communicative interaction, relationship development and knowledge renewal (Ballantyne & Varey, 2006). All the three activities are interrelated and supported each other to enhance the value created throughout the co-creation process.

The organization of value co-creation process in KIBS can be designed differently according to type of service or perspective of customer and supplier (Aarikka-Stenroos & Jaakkola, 2012; Kukk et al., 2014; Tuli et al., 2007). However, it basically consists of several activities such as customers' need identification, service implementation, evaluation and after-sale support. The structure is more complicated and involved many sub-stages if the service is more complex and the degree of customization is high. Additionally, these steps can happen in diverse order or even in parallel if arising problems are defined. Therefore, value co-creation of KIBS is not a linear process but an iterative process with interruptions and repetitions (Aarikka-Stenroos & Jaakkola, 2012; Stabell & Fjeldstad, 1998).

Experience of taking part in the value co-creation can also have impact on customer's cognition, emotion and result in their behavior (Payne et al., 2008). On the other hand, the value co-creation also has an impact on experience, knowledge and relationship of supplier side. Both customer and supplier have been influenced by relationship learning through interactions in the co-creation process. Accordingly, value co-creation process is considered as a learning process rather than merely a joint process. The learning process is characterized by a knowledge transfer from KIBS to their clients, in which customers know how to solve their problems or transform their business to improve its effectiveness and efficiency. On the supplier side, KIBS firms learn about customers' business, gain more experience in their field through co-creation opportunities with customers and improve their service quality based on customers' feedback (Seines & Sallis, 2003; Kohtamäki & Partanen, 2016; Payne et al., 2008).

Regarding key resources and capabilities of KIBS that are contributed to the value co-creation as well as to establish the competitive advantage for a firm, knowledge has been considered as the most important resource in a KIBS firm (Muller & Doloreux, 2009; Vargo & Lusch, 2004; Woiceshyn & Falkenberg, 2008). Knowledge can exist in many forms such as explicit knowledge (technical specifications and procedures that are

embedded in the firm's process and systems) and tacit knowledge (innovative ideas, know-how and experience) of human resources. Compared to explicit knowledge, tacit knowledge is difficult to imitate, store or transfer and usually seen as the most critical resource to gain sustainable competitive advantage (Nonaka & Takeuchi, 1996). In addition to knowledge, KIBS firms need to be equipped with relational capability to properly manage, build up and exploit these relationships to better co-create value for customers. Furthermore, learning capability enables KIBS firms to acquire knowledge from other organizations and incorporate the new knowledge into their internal process to provide services with more desirable outcomes.

3. Research Methodology

3.1. Research approach and methods

The research questions of this study focus on the organization of the value co-creation process of supplier and customer in the context of KIBS services and KIBS firms' resources and capabilities needed for running this process. This study takes a qualitative research methodology in an attempt to enrich existing theory with new understanding gained from the findings. Due to the explorative and discovery-oriented nature, qualitative research method has often been widely applied to seek to describe, interpret and understand phenomena through examining its context (Patton, 1990). If quantitative research method usually used to establish the correlative and casual relationship of testing hypotheses, qualitative research method aims to form a deeper and more holistic understanding of the phenomena being studied (Erikssen & Kovalainen, 2008; Strauss & Corbin, 2008). As the main purpose of the study is to investigate the phenomena of value co-creation process, the qualitative method is suitably applied to collect and analyze data for this study.

Consequently, the present study is conducted as a qualitative multiple case study to understand the value co-creation of KIBS firms and their customers as well as identify essential resources and capabilities from both perspectives. As a phenomenon is looked through many cases, a multiple case study enables the researcher to generalize from the findings (Saunders, Lewis, & Thornhill, 2009).

3.2. Case selection

Due to the explorative nature of qualitative research method, the examination of a smaller number of cases can be conducted (Miles & Huberman, 1994). Therefore, this study can rely on a small number of cases to analyse and interpret the data. The case companies have been selected through purposeful sampling which enables researchers to select information-rich cases for study in depth and detail (Patton, 1990). The focus is on understanding important cases rather than on generalizing from a sample to a population. With a purposive approach, the researcher actively selects "information rich cases that manifest the phenomenon of interest" (Patton, 2002: 234). By using purposeful sampling method, it is ensured that the cases will be interesting and relevant

to answer the research question. Among different strategies for purposefully selecting information-rich cases, criterion sampling has been used in this study. All cases have been chosen according to some predetermined criterion of importance. This method can exhibit certain predetermined criterion characteristics that are routinely identified for in-depth, qualitative analysis (Patton, 1990).

In this study, the cases are chosen according to following criteria:

- Case companies are small KIBS firms which has under 50 employees and have operated in Vietnam over 2 years
- Case companies have implemented successful projects with customers as big companies or organization, especially multinational companies in recent years
- Companies are known and recognized as an innovative or highly experienced company by customers in their field
- The interviewees are people who have high positions as CEO, managers in the companies and used to work directly with customers through many projects; have working experiences in KIBS field over 3 years to ensure information provided are valuable

The profile of the case companies are presented in the following table:

Company	Interviewee	Company Domain	Company size
A	CEO & Founder	Technology solution	Small (Start-up)
B	CEO & Founder	Technology solution and human resources training	Small (Start-up)
C	Manager	Market research	Small
D	Customer Relation Manager	Consulting	Small

Table 4: Companies and interviewees

3.3. Research context

Vietnam is a developing country in South East Asia with a dynamic market economy. The country has been considered as an attractive destination for foreign investment with an average GDP growth rate of over 6.4% in the 2000s. GDP growth in 2016 was 6.21% (General Statistics Office of Vietnam, 2017). According to the report of VCCI – Vietnam Chamber of Commerce and Industry (2016), the number of firms in service sector has been increasingly critically (from 94.206 to 300.768 in the period from 2007 to 2015, taking account of 68.35% of all businesses in Vietnam. Among the number of 52.7 million labours working in the economy, 32.43% of them are working in service sector. This means that the service increasingly plays an important part in the Vietnam's economy (VCCI, 2016).

In Vietnam, the knowledge-intensive business services are usually known as professional services or business development services. While normal services are often provided for individual customers, customer segment of business development services are businesses and the relationship between customer and supplier is business to business (B2B). This sector includes all professional business services that increase operational efficiencies, streamline business operations, market development, increase competitiveness and ensure the sustainable development of businesses. These services are audit and accounting services, tax consulting, technological consulting, research and development, advertising services, market research, management consulting etc. However, this sector is very small as only contributed 1.3% of GDP in the period of 2010-2015 though value increased significantly from 28.004 million VND in 2010 to 51.166 million VND in 2015 (VCCI, 2016).

In Vietnam, most of the companies providing KIBS are small and medium-size enterprises (SME). However, there has been recently an increase of multinational companies, especially in the field of legal and accounting activities. The most popular knowledge-intensive services in Vietnam are accounting, audit and tax consulting (65%), and the second is law-related services (49%) and then advertising (46.2%). There are approximately 23.3% businesses used to use market research and 30.1% companies used testing and technology analyzing services (VCCI, 2016).

Although knowledge-intensive services are quite new in Vietnam, they are one of the sectors which have the highest development in Vietnam. The reason is that knowledge-intensive services are the sector that small and medium-sized enterprises have competency while almost businesses in Vietnam are SMEs. In recent years, there are many SMEs taking part in providing professional services. Secondly, as knowledge-intensive services significantly reduce business's expenses, increase competitiveness, these businesses will act as an essential intermediary for businesses in Vietnam, especially for small and medium enterprises (SMEs). Pham Thi Thu Hang (VCCI Secretary General) stated that professional services sector will become one of the sectors that have the fastest development speed in Vietnam. These services play an important part in supporting the whole economy in Vietnam. It is believed that efficiency and competitiveness of an economy will be partly influenced by these knowledge-intensive services.

There are several characteristics of the market for knowledge-intensive services in Vietnam. First, market for KIBS are mainly concentrated in big cities as Hochiminh city and Hanoi - 90% (VCCI, 2016). Second, many businesses haven't used knowledge-intensive services and therefore, the market size of KIBS is still quite limited. Additionally, there is an increasing demand for using KIBS as customers are looking for expertise and knowledge to build up competitiveness. And finally, human resources in Vietnam are not high-qualified enough to take business opportunities in the short and medium term.

There is an increasing demand for knowledge-intensive business services in Vietnam. However, the biggest challenge for KIBS firms is how to make enterprises and businesses acknowledge benefits from KIBS instead of doing by themselves. As many small and medium-sized businesses lack resources and expertise, without using these services offered by KIBS firms, they cannot gain efficiency and effectiveness when competing with multinational and big companies. Additionally, another challenge for KIBS firm is to design and develop services that can be applicable for businesses in Vietnam, especially for SME. The service has to be easy to access, and also meet the customer requirement of price and quality. Besides, the knowledge level of small and medium-sized business owners varies in terms of level and field of work, therefore the

way KIBS firms market its services as well as the process of value creation has to be studied in depth. Another challenge for service providers is the lack of industry associations involved in the market. The role of industry associations is very important, especially in the process of developing and establishing industry standards.

3.4. Data collection

The data collection of this study includes both primary data and secondary data. Primary data was collected through semi-structured interview with each company case. In the interview, the researcher prepared a list of questions in advance to focus on specific issues related to the research topic and research questions (Erikssen & Kovalainen, 2008). Some questions may be added, others modified or even not asked or answered to make the interview more suitably, not be restricted and can discover other aspects of the issues. While unstructured interview is totally free, semi-structured interview enables researchers to refocus on the core subject of the research if the interviewee is going into the wrong direction and expanding into other topics. Semi-structured interview has a certain flexibility that enables researchers to get more details and real answers for the questions as well as create a pleasant atmosphere for the interview (Saunders et al., 2009). The topics of the interview are related to the value creation process in their firms, especially the involvement of the companies as well as their customers in different phases of the process. Besides, the interviewees were also asked about their firms' key resources and capabilities to contribute to the co-creation process as well as to build up their own competences.

Due to the constraint of time and location, the interviewer contacted all case companies online to get their permission from December 2016. The interviews with case companies were implemented online in February and March 2017. The interview questionnaire was prepared in both Vietnamese and English and then sent to the interviewees before the date of interview to avoid any misunderstandings. The combination of secondary data and the theoretical framework beforehand have been used as a basis to design the questionnaire. The length of each interview varies from 30 to 45 minutes. All interviews were recorded to make it easier for the researcher to study, transcript and interpret the data efficiently. The interviews were implemented in

Vietnamese to ensure that interviewees feel comfortably in sharing their opinions as all interviewees are not English native speakers. Then they were translated into English when the interviewer transcribed them. The transcript of each interview is from 2 to 3 pages. In the process of analysing the data, the interviewee also emailed the companies if there was anything not clear and needed more clarification.

Secondary data is mainly collected through information from the websites of the companies, quality daily newspapers, different documentations, articles from academic journals and official reports relevant to the research topic and objectives. Secondary data is not only valuable and reliable as they are collected by experts using rigorous methods but also provides a comparison tool which enables the researcher easily interpret and understand primary data (Ghuri & Grønhaug, 2005). Therefore, combining both primary and secondary data will enhance the credibility of the research (Saunders et al., 2009).

3.5. Data analysis

The data analysis process included two phases as with-in case analysis and cross-case analysis. A within-case analysis is defined as the in-depth exploration of a single case as a stand-alone entity (Mills, Board, & Wiebe, 2010). A with-in case analyse enables the researcher to have an in-depth understanding of each case company with their specific value co-creation process and their key resources and capabilities. On the other hand, a cross-case analysis was conducted to highlight the similarities and differences between the case companies on the value co-creation process as well as the critical resources and capabilities of the companies. According to Yin (2003), a cross-case analysis is a research method to facilitate the commonalities and differences in the events, activities and processes which are the units of analysis in case studies. In other words, the purpose of a cross-case analysis is to produce a synthesized outcome based on the analysis of two or more case studies (Miles & Huberman, 1994). In comparison with with-in case study, cross-case analysis can enhance the researcher's capacity to understand the relationship among discrete cases and generalise the findings, refine and develop concepts, build or test theory (Yin, 2003). The combination of both within-case and

cross-case analysis reveals in-depth understanding of the phenomenon in each case and also provides a synthesized outcome across cases to enhance the result of the findings.

For the within-case analysis, the present study provided a description of each case company with its value co-creation process as well as key resources and capabilities. It aims to give an overview of how each case company organizes their process to create value for its clients and what are their key resources and capabilities. And then the study is more focused on a cross-case analysis to highlight similarities and differences between the cases.

The data was analysed following a three-step process suggested by Miles & Huberman (1994) for a cross-case analysis: data reduction, data display and conclusion drawing and verification. Firstly, the transcripts of the interviews were reviewed carefully to identify main themes. After that, the data was clustered into categories which are derived from both the interview transcript and the theoretical framework. Then a network of nodes was formed to indicate the relationships among the categories. Finally, the data was interpreted based on patterns, explanations, possible configurations, casual flows and propositions to draw conclusions. Moreover, data analysis process was conducted closely following the theoretical framework which can help the researcher focus on the most relevant data, organise the cross-case study and define explanations (Yin, 2003).

3.6. Reliability and Validity of the study

The quality of a research is assessed by two main criteria as reliability and validity for the credibility of its findings (Saunders et al., 2009). The reliability is related to the extent to which the data collection techniques or analysis procedures will yield consistent findings even whoever is conducting the research (Easterby-Smith, Thorpe, & Lowe, 2008; Saunders et al., 2009).

There are several risks for the reliability of a research. For example, the interviewee might not understand the questions in the same way as the researcher (Ghauri & Grønhaug, 2005). In order to increase the reliability of the study, the questionnaire was offered in both Vietnamese and English as most of the interviewees have Vietnamese as

their native language. In the interview procedure, the language is used in Vietnamese to ensure all interviewee understand the questions clearly and exactly as the understanding of the researcher. Secondly, the reliability of the study can also be affected by the respondents' sincerity. For instance, respondents might not have enough information for the question and they answer by guessing or just their understanding (Ghauri & Grønhaug, 2005). Interviewees may answer what they thought their boss wanted them to say due to reasons of employment security (Saunders et al., 2009). In this study, the respondents are selected suitably in terms of their background and experience to the subject's questions, therefore, they are familiarized with the topic can be able to provide sufficient and reliable data for the study. Additionally, every respondent was informed of the confidentiality and anonymity to ensure the credibility of the research.

The second criteria – validity refers to the ability of the questionnaire to measure what was intended to measure or whether the findings are really about what they appear to be about (Saunders et al., 2009). For a qualitative study, a solid theoretical background and numerous references can help to guarantee the validity of a research (Saunders et al., 2009). In this study, the questionnaire was formed according to previous studies on the topic to increase the validity of the study.

4. Findings, results and discussion

4.1. Introduction of the case studies: The within case analysis

4.1.1. Case description

Case A

A is a young and small start-up company in information technology and services industry specialising in providing technology software solutions to help enterprises digitize and automate their operations by providing best actionable business insights. The company has founded in 2014 by talented engineers and experienced entrepreneurs who are enthusiastic about changing the world technology. Team members in the company used to have working experience in technological giants such as Google, Facebook or Microsoft and collectively possess valuable knowledge and expertise. Besides, team members who stay across seven countries enable the company can get in touch with global customers.

Currently, the company is working on a data analytics platform to revolutionize the data analytics experience business activities. This solution saves time and cost for other businesses in capturing trends and making strategic decisions. Current services of the company include: solutions in optimizing dynamic route and enterprises resource management platform and global algorithmic API services.

Dynamic route optimization solution (vRoute) helps business automatically optimize delivery routes and monitor delivery progress in real-time. It has been proved to save 40 percent logistic costs of labour and fuels for its customers and can be integrated seamlessly with any of other existing systems such as ERP/TMS/WMS/DMS. Furthermore, the solution has localized features that can resolve all business constraints uniquely for ASEAN market as bike/truck delivery, store locations or time window. The enterprise resource management solution (vApp) helps business to automate repetitive tasks and track performance easily. Global algorithmic API service (vAlgo) is designed for information technology firms that enable their developers to build powerful applications.

Customers of A are mostly multinational corporations especially in fast-moving consumer goods such as Procter and Gamble Vietnam (P&G), A.O. Smith Corporation.

The target customer market is Vietnam and the company will expand to foreign market in the future.

Case B

B is a startup founded in 2015 specializing in technology solution for human resource management in businesses with a combination of automated online software with human resource and legal professionals to ensure the highest quality at the most affordable cost for businesses. The size of the company is small, including fewer than ten people. Currently its target market is small and medium-size enterprises in Vietnam and neighbor countries which have not used a professional and automatic human resource management. For instance, construction companies as these businesses consist of many types of labors whose working behaviors vary differently as back-office staff, sales, engineers and workers. Currently the company also develops a platform to connect start-ups with mentors and specialists for business advice, solve problems by setting up group counseling.

The long-term vision of the company is to provide human resource management platform including offering technology solutions as well as human resource management training services for small and medium-sized companies. The service aims to increase the efficiency of business operations so that business managers can focus on developing their core businesses.

B is one of 14 graduation projects of Topica Founders Institute 2016 and is the second start-up complete the progress of Foundation's Seed for Action Accelerator Program. The company is currently receiving investment from G&H Financials (Hong Kong).

Case C

C is a market research company founded in 2012 operating in Vietnam and specializing on supporting customer brands in Southeast Asia. The purpose of the company is to support customers' marketing strategy by applying cutting edge research technology associated with competent consultancy. The company support business customer decision making in three levels as consumer understanding, strategy planning and execution. Right decisions help businesses to achieve a foothold in the market and

approach right customers with a strong brand presence. Besides, the company offers a range of solutions to support product launching and reach the right audience through the right channel. Customers of the company are mainly brands in a wide range of industries such as consumer goods, pharmaceuticals, technology as well as marketing agencies, media or consulting firms.

Case D

The company was founded in 1993 with main areas of activity as trading in capital goods production as consumption materials, scientific equipment in the health sector, construction materials, agriculture, transportation, environment etc. Since 2004, the company has expanded their business in consultancy activities, consisting of consulting, basic and detailed design of bidding documents, evaluations of bids, project management consulting in three main areas as education, environment and infrastructure, especially in ODA projects.

Some main projects have been implemented by the company are:

Project name	Description of assignment
North East and Red River Delta Regions Health System Funding source: WB Client: The Ministry of Health	Consult and support the implementation of the National health strategy in the Red River Delta and North East Regions in Vietnam. The purpose of the project is to provide qualified healthcare services and promote access to these services especially for vulnerable groups
Research on Water and Sanitation Impacts on disease conditions of children under 5 Client: Ministry of Health, Vietnam; Funding source: UNICEF	The project objective is to clarify the impacts of drinking water and sanitation interventions on the disease conditions of children under five for actions related to sanitation in disadvantaged areas in Vietnam.
Consulting services for supervision of construction and equipment installation Client: Hung Yen Obstetrics and Pediatrics Hospital	Research on the feasibility report, preparation for Proposal and Bids Evaluation; Advisory services for supervision of equipment supply and installation.

Table 5: Main projects implemented by company D

4.1.2. A description of value co-creation process

Case A

Founder of company A defined value co-creation as a process in which customer and supplier collaborate to improve result of the outcome. The value co-creation of company A can be divided into 2 phases: business development and service implementation. Specifically, the first stage consists of all steps related to approach customers as identify target customer sector, contacting them and meet face-to-face to introduce the service. The second stage is implemented after customers are really interested in the service and want to have further negotiations. This stage includes clarifications of customer need, negotiations on terms and responsibilities, implementation, evaluation and post-support to maintain customer relationship in the future. In the first stage, the company has approached potential customers through different channels: advertising through the internet, emailing, attending trade fairs and especially based on relationships with close partners. In this stage, the firm has an active role in their approach and does not depend on customers. However, existed customers and close partners can contribute to this stage with the role of sponsors who enable KIBS to get in touch with potential customers. In the second stage, customers get involved in more activities, especially in customers' need identification and evaluation.

Case B

The structure of value co-creation process in company B includes four steps: Introduction to trial; Establishing and invite all personnel of client company taking part in; Implementing (incorporating clients' management process into solution); evaluation; and follow-up and support. The company interacted with customers very early and throughout the whole process, especially in two stages as working with customer to identify their problems and preceding negotiations in terms of solution and price; and accompanying customers through instructions when using the service. The specific jobs of clients can be seen through main activities such as providing detailed needs and requirements that are relevant to their business, experiencing and evaluating service quality through purchase decision or not. It can be clearly seen that the clients contribute to the process through integrating their resources into the co-creation process.

Case C

The value co-creation process of company C consists of three main phases as customers' requirement identification, implementation and evaluation. In the first stage, customer usually sends the company a research brief which clarifies all requirements and objectives. However, in case customers without experience, customers state out their need and then the company will propose a brief for customers. In the implementation step, company C takes the main responsibility to carry out as market research is their expertise. However, all steps in the implementation phase still require confirmations of customer to precede the process. The involvement of customers in the value co-creation varies among customers according to the company sizes, their organization and experience in working with company C. In the evaluation, the company sends back the report to customer and it is usually revised at least several times after receiving feedback and information exchange from clients. There are usually extra requests arising from customer and the co-creation has to start again to meet customers' demand. Therefore, the co-creation process is not a linear process.

Case D

The value co-creation of company D is characterized by 3 main stages. The first stage is negotiation about all terms in the contract which includes project objective, implementation plan, human resources and responsibilities of each party. The second stage is implementation which requires high interaction and high degree of information exchange between client, consulting service provider and partners to ensure the project is preceded as the plan. Finally, the evaluation process happens at the end of the project when the company and its client evaluate the results; identify what have been done as opposed to project objectives. In complex projects which involved more parties, the project can be divided into many sub-stages and sometimes these stages take place in parallel or relaunch to ensure the project progress and address problems arising from the implementation.

4.1.3. A description of key resources and capabilities

Case A

CEO of company A stated that the key resource is human resource as the company provides service on a basis of knowledge which is not easy to measure. Therefore, human resources of Company A are gathered by top algorithmic engineers, including the multiple world champions of informatics competition and entrepreneurs with extensive experience in the software industry. Besides, he is always active in finding talented candidates through relationships with friends and partners. The competitive advantage of the company comes from tacit knowledge which is gathered by experience and techniques embedded in information technology services which can create higher value for customers. In addition to human resources, relational capability plays an important role in customer development. The company acknowledged the importance of customer relationships to the development of a small company, especially in the initial stage. CEO of company A also implied the necessity of the dynamic capability of an organization to reconfigure itself in a changing environment because a start-up like A will have to experience many different phases of development, even changing their customer segments as well as their services. Besides, a clear objective, transparency and team spirit in the workplace ensure the outcome quality for customers and pursue common goals of the company.

Case B

As a company providing technology solutions in human resource management, Founder of Company B identified three main capabilities to strengthen competencies of his company. The first thing is knowledge of human resources, which can be divided in specialization knowledge referring to human resource management and related legal regulations and expertise knowledge in information technology. Secondly, it is the ability to sense a market opportunity and turn it into a business if it is feasible in terms of technology and finance. And finally, it is the capability to innovate by leveraging new factors from the internet to grow on the digital technology platform which enables the company to reduce selling cost.

Case C

Three key resources that make up the competitive advantage of company C are human resources, technology and online community. Firstly, the company is staffed with consultants and experts who have vast experience in both local and international market and are fluent in modern consumer and their digital behaviors. In addition to expertise knowledge and experience in market research, the team members are fearless in their approach with innovative ideas to support customers with every step of decision-making process. Secondly, C owns a largest online research community in Southeast Asia which enables the company to support timely decisions based on quality data. With over one million consumers are part of the community and take part in research every day, C has the ability to support brand customers with agile fact-based decisions. Moreover, collaborating with partners in technology and using modern technology in market research enable the company to be agile marketing researchers and ‘10 times than competitors’. Stunning and compelling visuals from modern technology also amplify communication with customers.

Case D

The competitive advantage of company D comes from local knowledge combined with international expertise through experiences accumulated in implementing many consulting projects for the public sector in three main areas such as education, environment and infrastructure. The company profile is now associated with a long list of project implemented in the public sector, which increases chance to gain similar bidding contract in the future. Additionally, D especially emphasized the importance of relationship with customers and partners as the key to success in Vietnam.

4.2. Cross-case analysis

4.2.1. Value co-creation process

By applying the value co-creation framework suggested by Payne et al. (2008), the value co-creation in knowledge intensive business services is designed into three processes as customer value-creating process, encounter process and supplier value-creating process. To validate this model for a value co-creation of KIBS firms and customers, the study will analyse the value co-creation process from customer and supplier process:

- Customer process:

Customer's value creating process includes all activities performed by the customer to achieve a particular goal. If a supplier wants to improve its competitiveness, it has to develop the capability to influence customer's process (Payne et al. 2008).

In the study, all interviewees were asked why their companies choose to provide this kind of service, what benefits of their service offering are and how their service offering fits with customer's activity. All case companies acknowledge the problems their customers have experienced as their value creation opportunities and how their services help their customers to solve these problems. Founder of Company A recognized last mile problem that customers have experienced and how it impacts delivery process to end-users. Besides, he also recognized a practice in Vietnam as many small & medium businesses do not have a data system management and they haven't made use of its data efficiently. Similarly, Founder of Company B realized that many enterprises in Vietnam haven't applied technology solution in human resource management and these out-of-date methods do not meet the demand of managers as it takes time for simple administrative tasks. For Manager of Company C, the fact that technology development has changed customers' interactions with products and makes the connectivity between brands and consumers more complex requires companies need to truly understand how their customers interact with their brands to make quick and proper decisions in marketing strategy. Then the value the case companies create is to help customer recognize their problems and solve their problems by directly influence business process such as "fasten the delivery process", "save time consuming", "automate their

operation” (Founder of Company A), “upgrade their management process” (Founder of Company B), “making better decision in marketing strategy” (Manager of Company C) and “support project implementation and improve their performance” (Manager of Company D):

Our technology solution helps customer companies find an optimal route fasten the delivery process and save time-consuming. Time saved is money saved. By making technology solutions available to as many enterprises as possible, our insight is to help businesses automate their operation and build a foundation for data-driven business operations. (Founder of Company A)

Our company wishes to provide software solutions that help businesses upgrade their management process. (Founder of Company B)

Our purpose is to support clients in making better decisions by applying cutting edge research technology and competent consultancy. (Manager of Company C)

Payne et al. (2008) suggested that supplier need to develop a full understanding of where supplier’s offering fits within the customer’s overall activity. However, for KIBS services, it is impossible to understand customer’s overall activities as customer of KIBS are business customers, one KIBS firm can serve different companies in different industries. For example, a consulting firm can both provide management consulting service to government or a private company, an advertising agency can provide services for a film production company or a milk producer. For case companies, they understand how their offering fits with customers’ problem that they choose to serve. Therefore, the value creation activity of KIBS firm is considered as a problem-solving process (Aarikka-Stenroos & Jaakkola, 2012; Woiceshyn & Falkenberg, 2008). The value creation logic in value shops, problem solving, is the change from an existing state to a more desired state (Sheehan & Stabell, 2007). However, Founders of Company A and B indicated that small businesses don’t have popular brands and customers would not seek them for problem-solving, therefore they have to be active in helping their customers realize their problems and improve customers’ relationship experience.

Three customer elements of relationship experience which can have impact on customer experience in value co-creation are cognition, emotion and behaviors (Payne et al.,

2008). When applying to knowledge intensive business services' customers, four interviewees see that cognition can be related to how customers recognize the importance and benefits of the services, how they see their role in co-creating with suppliers. The emotion aspect refers to whether customers are interested in the service offering or satisfied when working with the supplier or happy with the quality of the service. The behavior aspect is related to customer's actions such as customer agreement to hear about the service introduction, the involvement of customer in value co-creation process to provide information or integrate resources, the readiness for evaluation and feedback, continuing using services in the future or recommending other partners. Founder of Company B added that these actions are often resulted from their cognition and emotion by experiencing service and resulted in customer loyalty, commitment and endorsement. It is important to enhance customers' cognition especially by providing them necessary information and benefits of the service offering through many channels such as website, phone, or attending fair to introduce product and services.

In Vietnam, customers are not easily adaptive to technological changes and not easily to change their minds as well as their operating ways. It both acts as challenge and opportunity to our company. If customer acknowledges their problem, it is easier for them to accept changes. For the other ones, even when our solutions are more convenient, if they don't see it as a big problem; they will not change their mind. (Founder of Company B)

Besides, influencing their emotions can also lead to positive signs in customers' behaviors:

The most important point is to make customers happy. (Manager of Company D)

Through building close relationships with customers, customers are more enthusiastic to know about the service and use it. Then use these existed relationships to convince other companies. Customer development is mostly based on customers' endorsement. (Founder of Company A)

In general, the interviewees showed that they commonly influence the customer value-creating activities through increasing customers' cognition about companies' service

offering combined with influencing their emotions by building close relationships which will result in better customer relationship experience.

- The encounter process as value co-creation process

The encounter process consists of all two-way interactions and transactions between supplier and customer (Payne et al., 2008). The interviewees were asked to describe the process in which they work with their customers to solve their problems. Firstly, they all acknowledged the importance role of customer in the whole process to co-create value for the service outcome. More specifically, the roles of customers and roles of suppliers have been identified through specific phases or activities. The encounter process between customer and KIBS supplier is highly interactive from the beginning of approaching customers until the end of service providing to customers. Through this joint process, both parties integrate their resources as skills and knowledge to enhance the value created from the service offering for customer.

Founders of Company A and B realized the value co-creation start with service introduction to target customers while the others (Managers of Company C and D) assumed it started with customer's need identification. From the supplier perspective, encounter process can include five main activities: service introduction to target customers, customers' need identification, implementation, evaluation and after sale support.

Service introduction to target customers

Two case companies see the value co-creation started from the introduction stage when service suppliers contact clients to introduce its service. This phase can be seen as selling activities or customer development and supplier acts as a seller rather than a problem solver. Although in this stage, the interaction between customers and supplier is not very intense, however, interviewees believe that value can be created for customers even they have not decided using the service as customers get to learn about the services and its benefits. In other words, this activity helps customers recognize their business problem. On the other hand, customers can also create value by expressing their opinions why it is not necessary or not meet their demand so that service suppliers

can improve quality service. This activity can be approached by many channels, and for small businesses, they often take advantage of digital channels such as website, email or phone and then face-to-face meeting with customers. By using digital channels to introduce their services to customers, suppliers presents detailed information about benefits of services in their websites as well as blogs (all case companies), offering free trial especially in technology solution (Company A and B), offering free reports of market research (Company C) or list of detailed projects they have attended (Company C and D).

As a small and young company, A and B has to be more active in looking for co-creation opportunities through helping customer realize their problems; unlike big companies, they already have reputation and long-term relationships. For C and D, although they are small businesses but have operated in the market for quite a long time and have regular customers. Hence, they don't have to make as many efforts as A and B on finding potential customers and introducing their service offering to customers.

Customers' need identification

All service suppliers recognized that customer often get involved highly in the beginning of the process as customers' need identification because the role of customer is very important in this phase. Customer has to provide all information such as their problem, their expected outcome, schedule, deadline, their business information etc. All information ensure the supplier understand entirely customer's need and have the ability to meet their demand. This supports the finding of Aarikka-Stenroos & Jaakkola (2012) that customer provided significant information for the need identification such as customers' requirements and expectation, business information, budget, schedule:

The first phase is we need to negotiate and clarify all terms & clauses in the contract, especially customer expectation as well as schedule, budget, implementation plan, human resources and responsibilities, resources. Customer needs to provide all information (objectives, requirements, budget, and time schedule; documentations) to ensure the supplier can understand and support. (Manager of Company D)

After customer is very interested in the service, we will meet to discuss directly about the price, customers' requirement and our ability to meet their demand. (Founder of Company A)

There were two phases in which customers have the highest level of involvement as customer requirement identification and implementation. They have to provide information about their business operation and their problem. (Founder of Company B)

Referring to the role of supplier in this activity, Founder of Company B said that suppliers also have to quickly understand customer requirements; Manager of Company D indicated that the job is negotiating and clarifying all terms & clauses in the contract. Additionally, Manager of Company C proposed that not all customers are knowledgeable and experienced enough to identify their problems and articulate their expectations clearly. In this cases, suppliers act as a consultant by using their experience and specialised knowledge to propose the diagnosis and assist customers in identifying their needs.

There are also customers without research background, they totally depend on us. We have to consult what they should do. (Manager of Company C)

Implementation

In the implementation phase, all interviewees suggested that the role of supplier is more important as this activity requires technical specialization, knowledge, skills and experience of the supplier to help customer solve their business problems:

Definitely implementation is our responsibility as doing market research requires specialization and knowledge, skills of specialists. (Manager of Company C)

It is our responsibility to implement the solution as stated in the contract. However, there are also interactions between customer and supplier throughout

the implementation phase; all steps need confirmation from customer such as design questionnaire. (Manager of Company C)

However, in this activity, interviewees especially highlights the importance of communication between customer and supplier to ensure the objective of the project is achieved, the project is preceded in the right way, all actions have confirmation and are acknowledged by both parties and customer is satisfied. Communication can be seen in three ways as informational, communicational and dialogical (Ballantyne & Varey, 2006). The first one is more related to persuasive message making which only started from supplier side as promises to sell the benefits. The communicational mode refers to two keys aspects of interaction as informing and listening. The final one as an advanced form of communication – dialogue as it supports co-creation of value and sustainable competitive advantage. Communication of KIBS firms and customers is existed in the dialogue form, as it is not only informing and being informed but learning to improve the quality of outcome as:

In the implementation, the most important thing is to make customer satisfied. It is important to keep contact, discuss frequently the progress of the project, how about the team work make them satisfy or not [...] There will be problems that arise in the implementation and make the job can't be done as negotiated before and need solutions. In contrast, supplier can find new solutions for a problem that is thought as cannot be solved before, so two parties should frequently discuss. Understanding customer needs not only originated from the initial problem identification but throughout the whole process. (Founder of Company A)

Besides, the suppliers have to be active in the role of involving customers and communicating with customers at the right time. Not all steps need confirmation or involvement of customers as KIBS firm can expose to higher risk when the client participation is not needed (Greer, 2015):

The role of supplier is rather important as the implementation role as it depends on the specialisation and knowledge, experience of the consulting firm and also need to communicate with customer at the right time (D)

In case conflicts arise in the implementation phase, Manager of Company D suggested that the company should try their best to meet the demand of the customer by rearranging resources for implementation within the scope of law and the specified contract. And after considering, if the company cannot meet the demand of the customer, supplier should explain carefully to make customer understand with appropriate reasons.

The involvement of customers generally varies depending on the degree of service customization. Services with a lower degree of customization seem to involve less interaction than services characterized by uniqueness, high level of customization and explorative nature (Skjølsvik et al., 2007). In four case companies, market research requires less interaction in the implementation as the main responsibility belongs to the supplier, then two case companies of information technology solution expect a moderate level of customer involvement to ensure the implementation process's result fit with customer business operation and their expectations. Referring to Company D as a consulting company, the project is also more complicated and requires high interaction with customer to update the progress and timely adjustment in need. Besides, the active involvement of customers can also be influenced by customers' knowledge and the capability of supplier to encourage customer co-create value. As KIBS services in Vietnam are quite new and not many business customers use these types of service, customers are probably inexperienced, suppliers has to be more active in organizing, encouraging customers to get involved in the value co-creation process (Aarikka-Stenroos & Jaakkola, 2012). Suppliers frequently appear to adopt the role of value process organizer to "identify, activate, collect and integrate relevant resources to make value creation possible". In case customers are totally inexperienced, supplier also acts as a consultant for instructing customers when perusing optimal value-in-use:

If customers are consumer brands or big companies, they also have their own marketing team or research team. For these companies, they get involved in almost phases of the process as they both have knowledge, experience and also have to control output quality to ensure everything supplier do is aligned with their principles [...]Some customer as end-clients, they don't have research

background and experience, they depend entirely on our company. In this case, our company acts as a consultant for the customer. (Manager of Company C)

In general, the implementation phase requires customer involvement in a collaborative process but the supplier's role seems to be more prominent in organizing the process and active communicating with suppliers to get customers involved in the right time.

Evaluation and post-support

The evaluation and post support are defined as two final activities for value co-creation process in case companies. All case companies realized how important it is for improving the quality of service based on customer provided evaluation and feedback. The role of customers as a value creator for improving the quality of service is most clearly recognized in the evaluation phase. The evaluation process can vary depending on different type of services. For example, customer of a market research report can evaluate the quality of the report after short amount of time while customer of information technology solution can only give feedback after a specific period time of applying solution in their business. According to Manager of Company D, the evaluation process depends on the projects, some complex project requires even three to five years to have results of project implementation and hence, evaluation.

On the supplier's side, being open to customers' opinion and making efforts to find new solutions to improve quality services are considered as the key to success. Besides, post-support as providing instruction and supporting after service selling or maintaining service is important to maintain relationship with customer

The communication with customers through service after sale will continue even when the contract is completed is important to keep customer for future purchase. (Founder of Company A)

It is also usual that there are problems or customer need arising from the evaluation and then the process started again with customer identification, implementation and evaluation. This finding confirms that the value co-creation process does not follow a linear sequence but iterative as some activities may re-launch activities attended and

some activities can take place in parallel with others. For example, D told that the implementation can be designed in pre-defined milestones and evaluation of each milestone has to be made before preceding the other one. For market research, revising activity happen frequently, which not only resulted from suppliers' value creating process as supplier do not meet customer requirement but also from customer's extra requirements:

It is rarely to provide customer the final output report without revising it at least 1-2 times for an easy-going customer, and 5-6 times for a strict customer. In this phase, customers' opinions and feedback are very important to improve the output as good as their requirements. Sometimes it happens not only resulted from our fault (ex. not understanding customer expectation) but customers have extra needs. (Manager of Company C)

Post-service support is a frequent activity in technology solution industry when companies have to follow up their customers to provide necessary assistance in the process of operating the product and services (Company A and B). For company C and D, responsibility of suppliers usually completes when the service outcome is delivered to their customers. Nevertheless, managers of company C and D indicated that their companies and their customers also regularly keep contact and assist each other for future collaborations.

- *Supplier learning*

Learning is considered as one of key value-creating activity as the service-dominant logic encourages the sharing of new ideas and new knowledge within the firm, and with key customers and suppliers (Ballantyne & Varey, 2006). Knowledge renewal, which consists of the generation, sharing and application of knowledge, is a fundamental source of competitive advantage. Especially for KIBS firms, which its economic activities are directly related to the creation, accumulation or dissemination of knowledge, the recognition and application of knowledge learning through interactions and relationship with customers are more critical.

For all case companies, they confirm that through customer interactions in value co-creation process, they have gained considerable knowledge to improve service quality as well as to build up their own competencies. Specifically, KIBS firms possess substantial tacit knowledge about their customers which is derived from co-creation experience with customers. The knowledge is accumulated through different customers and then flexibly utilized to enhance the knowledge base of the KIBS and implement other projects in the future:

As a service supplier, we cannot have specialized knowledge of industry as customers have. When collaborating with customer, we get customers' knowledge and insight of a business or an industry, and can use this knowledge to apply for other customers in the same industry. Each customer from different industry shares different areas of knowledge that enriched our knowledge and understanding. (Manager of Company C)

Especially for start-up and small companies, co-creation process with customers are highly appreciated as valuable opportunities to improve their service quality as they are usually insufficient of experience as well as resources compared to big companies:

As a start-up in technology solution, we have taken a customer-centric approach, in other words, customer as a partner in service development. We highly keep track of customer's opinion from the concept evaluation to researching and building the preliminary version to the finished version. (Founder of Company B)

Additionally, small KIBS suppliers not only gain an understanding of customer business and specialised knowledge but also acquire professional skills through interacting with customers such as project management skills, leadership skills to apply in their procedure:

As our customers are mostly multinational corporations, we have learned a lot from them. Most of them have very professional working system for example the diversity in educational background and experience, the way they organize people and arrange work, the way they motivate others... (Founder of Company A)

Beside, supplier learning can be recognized and supported by other parties who are indirectly related to the value co-creation process, as interviewee of D indicated:

In Vietnam, donors such as World Bank or ADB have policies to young and inexperienced companies to participate in consulting bidding packages so that they can have experiences and increase the competitiveness of the market. Otherwise, the market will be dominated by large experienced companies. Through engagement in many projects, small and medium-sized companies as ICT can improve their capacity in project implementation and organization management, resource mobilization and develop relationships between partners.
(Manager of Company D)

Regarding learning aspect of KIBS in value co-creation, KIBS also experience challenges that arising from customers. Manager of company D mentioned that due to concerns about information security, some customers are not willing to disclose information related to their business. This fact impedes knowledge sharing between customers and service suppliers and leads to unsatisfactory results of the collaboration process. Hence, the learning process can be only facilitated if two parties acknowledge the importance of knowledge sharing and efficiently integrate external sources of knowledge into their organization.

As can be seen from the above analysis, KIBS firms get involved in a learning process through interactions with customers. In addition to recognition of value from customers, a key issue for KIBS is to ensure that customer knowledge is captured and utilized effectively to enhance their competencies.

4.2.2. KIBS firms' resources and capabilities for competitive advantage

In the value co-creation process, the main responsibility of KIBS firm is to provide customer expert knowledge to solve customer problems (Aarikka-Stenroos & Jaakkola, 2012). When being asked about main resources to build up company's competences, all case companies highlight the importance of knowledge which can be existed in many forms such as specialist knowledge of human resources or accumulated knowledge

obtained from many years of working experience with customers or skills as communication skills or relational skills. However, the awareness, development and utilization of resources and capabilities of KIBS firms considerably vary among KIBS case firms corresponding to size and type of service (Huggins & Wteir, 2012). The following part will specify commonalities across cases:

Knowledge of human resources

Referring critical resources of the company, all case companies first highlighted the importance of their human resources as the most important resource. As Nonaka & Takeuchi (1996) insisted that knowledge of an organization is gathered from individual knowledge through a process of interactions, in which knowledge is fused and created. Therefore, knowledge of human resources of a company forms a basis for a knowledge firm to operate. Especially for KIBS, as knowledge is the input as well as the output of value co-creation process, human resources need to be sufficiently equipped with expertise knowledge combined with critical skills. Each company also has its own way of recruiting and training its human resources. If company A and B are always active in finding talented candidates through relationships with friends and partners, company D is following a traditional approach in human resource recruitment. For company C, it especially pays more attention to human resource by designing and offering a management training programme for potential candidates and company's staff. Due to operating in a developing country where education level of labour force is not high enough to meet the demand of KIBS, human resources represent challenges for all case companies in looking for well-qualified personnel.

The critical type of knowledge resources also varies slightly among the cases. CEO of company A emphasized that the competitive advantage of the company comes from tacit knowledge which is gathered by experience and techniques embedded in information technology services which can create higher value for customers. Likewise, manager of company C and D preferably considered tacit knowledge as experience rather than technical expertise and hard skills. Specifically, regarding company C, vast experience in both local and international market combined with fearless approach and innovative ideas support customers with every step of decision making process. Similarly, manager of company D implied that its competitive advantage comes from

local knowledge combined with international expertise through experiences accumulated in implementing many consulting projects for the public sector. On the other hand, Founder of Company B proposed that tacit knowledge (innovative idea, know-how) is equal to technical knowledge (human resource management and related legal regulations as well as expertise skills in information technology).

It is also recognized that all cases not mentioned the importance of registered patents and other forms of intellectual property right. It confirms the opinion of Honig (2001) cited in Huggins & Weir (2012) that small firms are likely to invest more in human capital than other types of intellectual assets during their early stages. They are less likely to own complex knowledge management process compared with big companies.

Referring essential knowledge and skills of human resources, all interviewees suggested that these skills can vary according to different teams and their positions. For example, manager of company C implied that expertise knowledge and hard skills are more emphasized for junior level while senior level as managers or senior consultant should be acquired with more professional knowledge and soft skills such as communication, leadership and conflict management. Similarly, manager of company D proposed that both hard skills and soft skills are important for its staff. Soft skills are highly emphasized for manager level as communication skills, awareness of business culture, ability to listen to customers' need and capability to learn and adapt to customers' requirements. It shows an increasing importance of interpersonal skills over hard skills in complex projects, particularly in KIBS, when a co-creation process is considered as a social act and happens through interactions between people (Azim et al., 2010).

It can be clearly seen that all managers acknowledged that both explicit knowledge as skills, technique, procedure, routines and tacit knowledge as experience, ideas, know-how play an important role in the companies' success. Explicit knowledge is considered as the necessary condition that human resource of a company has to be equipped to provide quality services for customers. However, tacit knowledge which can only be observed through application and acquired through practice and experience is considered as the sufficient condition for a company to achieve sustainable competitive advantage. Various forms of knowledge are constantly mixed, exchanged and enriched not only within an organization but also in KIBS-client interactions.

Relational capability

In addition to knowledge of human resources, all interviewees also emphasized the importance of relational capability. The relational capability of an organization is usually considered as the ability to build up relationships with customers, partners and even competitors. In a company, it is necessarily required in higher level position as top managers, directors as they are often decision makers who directly work with customers in important stages. For all case companies, relational capability enables KIBS firms to have the opportunity to approach potential customers as doing business in Vietnam is mostly based on close relationships to make others trust and achieve a long-term cooperation.

It is lucky for us from the beginning can get in touch with potential customers as multinational companies based on the relationship with partners, so that we can have opportunity to collaborate and supply technology solutions for them [...] Relationship is prevalent. As people moving from a company to others, they also bring existed relationships to other companies. Therefore, maintaining relationships with customers and partners is very important. (Founder of company A)

Founder of Company A implied a fact that the transfer of human resources of one company to other organizations make relationships spread widely and benefits the company. Similarly, Founder of Company B also suggested that the capability of networking, building and maintaining relationship with current and potential customers are critical in business development:

Building relationship with customers and then using these relationships to convince other customers. Customer development in Vietnam mostly based on customers' endorsement. (Founder of company B)

For company A and B, the way they approach customers is mostly based on customers' endorsement, which is obviously presented in their websites. Recommendations from big companies and multinational corporations can increase trust and become a

relationship bridge between KIBS firm and their potential customers. For company C and D, as these companies have operated in the market for a longer time, they already possessed long-term relationships with customers. Long-term relationship with customers makes it easier to co-create value, shorten the time and improve the quality of output. However, these relationships can also put more pressure for KIBS firm as KIBS firms have to accept customers' extra requirements to maintain relationship with customers:

Most of our jobs (80%) come from regular customers. It is much easier to work with them because we know the style of each other. Time is shortened and quality is improved. However, sometimes big customers put more pressure on our company by urgent deadline or extra requirements but we still have to accept to maintain relationship with them as they are big companies. (Manager of Company C)

Besides, relational capability should be put in a broader view which is related to clients, partners and even competitors. Manager of Company C implied that cooperation with partners as competitors bring the company more opportunities as big companies often subcontract part of their projects. Moreover, collaborating with partners in technology and using modern technology in market research enable the company to be agile marketing researchers and "10 times than competitors". Stunning and compelling visuals from modern technology also amplify communication with customers. Interviewee of company D recognized the importance of relationships among a constellation of actors to maximize the value created. In order to implement complex projects, a small KIBS firm has to build up relationships with many partners to co-create value for customers due to lack of resources and expertise in a specific field:

In case a complex project requires different areas of knowledge and skills that our company has to subcontract some parts of a project to partners as subcontractors [...] Therefore, building relationship with high qualified partners is necessary for value co-creation process [...] Without information and relationships, we can't know what we can do and who we can cooperate with. (Manager of company D)

In sum, all case companies acknowledge the importance of relational capability to the value co-creation and competitive advantage of the company. As young companies, company A and B probably more focused on developing the ability to build up relationships with potential customers through customers' endorsement. For company C and D which have more existed relationships with customers, the managers of these companies extend the range of relationships in the context of partners and competitors. Ability to build up, maintain and develop relationships not only create opportunities for small businesses and also help KIBS firms better co-create value for customers which can result in higher value-in-use and increase satisfaction for customers.

Dynamic capability

Dynamic capability refers to the firm's ability to integrate, build and reconfigure internal and external competences in order to address rapidly changing environments (Teece, Pisano, & Shuen, 1997). The importance of dynamic capability is only recognized by founders of company A and company B, which are small and young companies both operating in the technology industry. Founder of company A sees this capability as a requirement for a start-up to quickly adapt to changes in a highly competitive environment:

As a small company, we will have to go through many different phases in the process of service development, even changing target customer sectors to adapt and grow in the future. (Founder of company A)

For interviewee of B, dynamic capability is seen as one in three main capabilities to strengthen competencies of his company. Dynamic capability composed of three activities as sensing which refers to identifying and assessing opportunities outside the company, seizing (mobilizing its resources to create and capture value from these opportunities) and transforming (continuous renewal – reconfigure tangible and intangible assets meet new challenges) (Teece, 2007) as Founder of Company B mentioned:

As a small company, we need to have the ability to recognize the issues that enterprises are experiencing and the ability to solve that problem by applying knowledge and specialization. In addition, it is the ability to make this opportunity become a product in the market if the problem actually existed, scale of the issue in the market is large enough to invest in and it is feasible in terms of technology and economy. (Founder of company B)

In addition to above resources and capabilities mentioned, each company also possess other resources and capabilities for their own competitive advantage. Interviewee of company A suggested the importance of a clear objective, transparency and team spirit in the workplace to ensure the outcome quality for customers and pursue common goals of the company. Manager of company C said that possession of a largest online research community in Southeast Asia enabled the company to support timely decisions based on quality data. Founder of company B believed that their innovative ability to take advantage of digitalization platform to reduce expense of approaching customers, utilizing the internet for marketing service and increase customer cognition of using technology solutions in their business operation.

In summary, all companies recognized the importance of their human resources, especially tacit knowledge embedded in practical experience and expertise through interaction with customers and partners. Moreover, relational capability of an organization can open more opportunities and strengthen competencies of the company through relationships with right partners to co-create value in a wider network. Besides, young companies or start-ups as company A and B are more dynamic in their approach as applying innovative technology, using digital channels to develop customers and customer endorsement. On the other hand, competitive advantage of company C and D mainly come from extensive experience from a long list of projects implemented and a network of relationship with important partners.

4.3. Summary of findings and revised framework

All the case companies accepted that the role of customer in process of providing knowledge intensive service is very important. Therefore, the value creation process of knowledge intensive business services should be considered as a value co-creation process in which both parties integrate their resources and capabilities for optimal value-in-use.

4.3.1. How the value co-creation process is structured from the perspective of small KIBS suppliers?

The value co-creation process can be structured in different ways from supplier perspective, depending on level of service customization and company's procedure; however, it can be organized by main activities as: service marketing, customer's problem identification, implementation, evaluation and post-support. The involvement of customer in value co-creation process also considerably varies according to the complexity of service, awareness and willingness of customers and relational capability of supplier in encouraging customers to get involved in the process. On the supplier side, all case companies agreed that the most important resource of a knowledge intensive business service firm is knowledge of human resources, which impact directly on the optimal value-in-use for customers through value co-creation. Besides, case companies also combine different resources and capabilities to create unique competences. The following table summarized above findings:

Criteria	A	B	C	D
Age (years)	3	2	5	9
Level of Service customization	High	Moderate	Low	High
Structure of value co-creation process	2 phases: customer development and service development (Problem identification, implementation, evaluation and post-support)	Service introduction, Problem identification, implementation, evaluation and post-support	Customer's need identification, implementation, evaluation	Initial negotiation, implementation, evaluation
Iterative process	Yes	Yes	Yes	Yes
Customer's highest involvement	Need identification and evaluation	Need identification and evaluation	Need identification and evaluation	Throughout the process
Learning from customers	Yes	Yes	Yes	Yes
Supplier's key resources and capabilities	Tacit knowledge (experience and confidential technique), relational capability, dynamic capability and clear strategy and objective, team spirit	Expertise knowledge in Technology and Human resources, relational capability, dynamic capability, digitalization capability	Tacit knowledge (Experience and Innovative approach), relational capability, technology, online community	Local knowledge international expertise,, extensive experience and network of relationships
Challenges	Lack of qualified human resources	Lack of qualified human resources	High demand from customers, pressure on service price and time	Lack of qualified human resources

Table 6: Summary of findings

4.3.2. What are the roles of KIBS firm and customers in this process?

When taking part in value co-creation process, the role of supplier and customer can be shown through main activities in this table:

Supplier's role	Customer's role
Identify customer's need by using specialized knowledge and expert;	Provide needed information to help customer identify the need or problem;
Guide and assist customers in identifying their needs	
Suggest appropriate solution and implement it	Get involved in implementation by providing feedback and confirmation, even suggestions
Communicate with customers at the right time to have timely adjustment	Be open in sharing information
Manage and integrate resources to meet customers' demand	Control quality of outcome
	Provide evaluation and feedback

Table 7: Responsibilities of supplier and customer in value co-creation process

Based on the results and findings of our empirical study, a revised version of the value co-creation framework could be proposed for knowledge-intensive business services. Some main changes applied to the model: Firstly, the revised model does not separate value – creating process of customer and supplier as in the value co-creation framework of Payne et al. (2008) because both customer and supplier create value for each other through encounter process. Secondly, the encounter process design is seen as the value co-creation process in which supplier and customer participate in by integrating their resources and capabilities to maximize value created rather than an integrative mapping activity of customer's and supplier's processes. Value co-creation process influences customer's relationship experience through customers' cognition, emotion and behaviors. For case companies, young companies seem to believe that influencing business customers through cognition is the most powerful and effective way as B2B customer only agree to use the service if they understand value from knowledge intensive business services. It confirms the finding of Oliver (1993) cited in the study of

Lam, Shankar, Erramilli, & Murthy (2004) that “customer value can be considered a cognition-based construct capturing any benefit-sacrifice discrepancy whereas customer satisfaction is primarily an affective and evaluative response”. Similarly, this finding also affirms that business-to-business (B2B) customers are more rational in decision-making as they are influenced by tangible factors as companies’ policy, financial budget and the required functionality or product and service rather than emotional and self-expressive effort in consumer market (Webster et al., 1972). Satisfied customers seem to be willing to patronize the service provider and recommend the provider to other customers, as Reichheld & Sasser (1990) and Oliver (1999) suggested.

On the supplier side, value co-creation process has an impact on supplier’s experience as the supplier gains more knowledge, experience and also relationships through interactions with customers such as managing customer relationships, dealing with the customer’s problem (managing resource allocation, integrating customer resources to meet customer’s expectation). Relationship experience of the service supplier can belong to some factors from customer side such as knowledge or willingness to get involved in the co-creation process, but more importantly come from the knowledge and expertise of their human resources, capability of service provider to organize the process, instruct customers and actively communicate customers at the right time. In order to enhance relationship experience, all case companies emphasized the importance of communication with customer throughout the value co-creation process. Especially, the communication purpose is open-ended, discovery-oriented and value creating (Ballantyne & Varey, 2006).

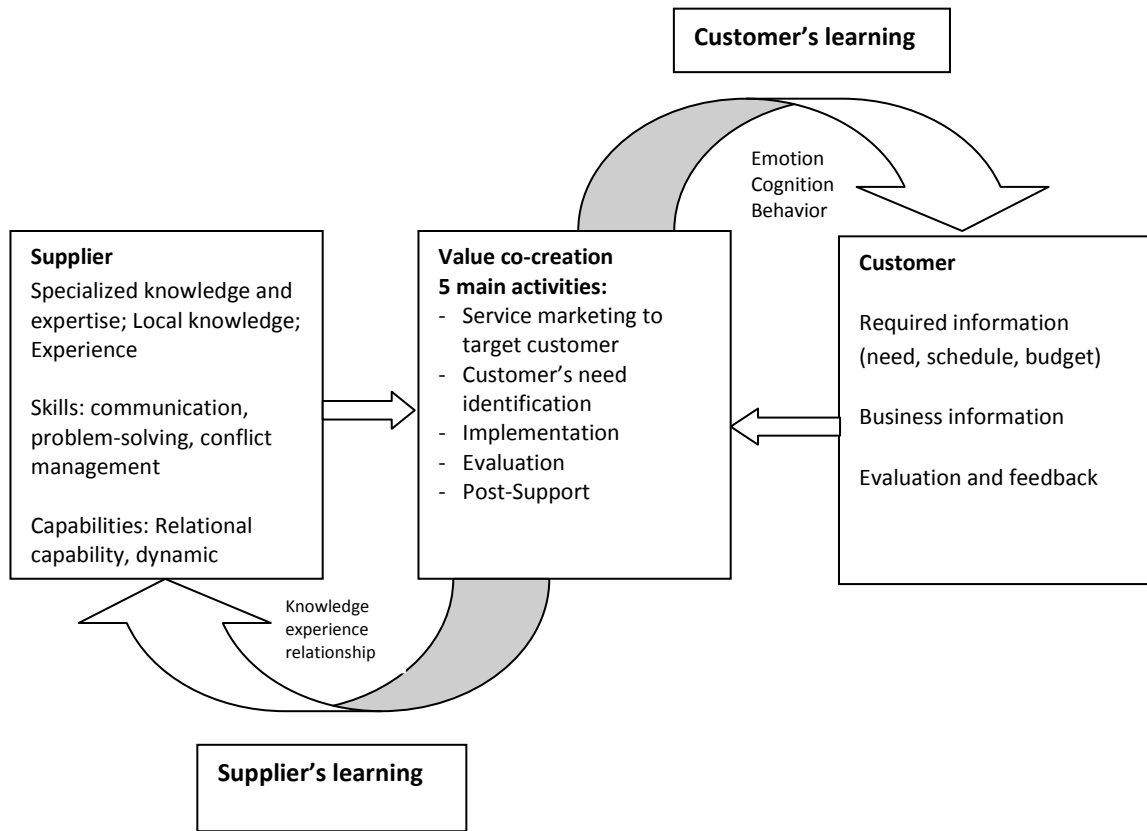


Figure 10: Revised model of Value co-creation

Relationship learning results from relationship experience of KIBS firms and customers. In other words, both suppliers and customers take part in a learning process. Through relationship learning, both customer and supplier find ways to reduce redundant costs, enhance quality and reliability and increase speed and flexibility (Dyer & Singh, 1998). The importance of relationship learning is the ability to integrate other knowledge into a business. Specifically, relationship learning is values that are extracted from relationship experience of customer and supplier that can have the ability to transform customer's business or enhance supplier's competences. As a direct output of the value co-creation, knowledge is transferred from KIBS firm to customers. Customers identify ways to innovate or automate their business operations (for customers of technology solutions) or get the insight of market research to make better decisions or have the best knowledge support in project implementation. On the supplier sides, KIBS firms gain knowledge of customer business in a specific field, improve service quality based on

customers' feedback and evaluation and set up relationships for more opportunities in the future. Especially for small companies which have less experience and resources as compared to big companies, relationship learning plays an important part for small KIBS firms to enhance their competences.

4.3.3 What are the critical resources and capabilities of the KIBS firm needed for value co-creation process?

Related to critical resources and capabilities of small KIBS, knowledge of human resources such as expertise knowledge, experience, skills (project management, communication, teamwork, leadership, conflict management) are the most important resource of KIBS. These resources are not only considered as important input of value co-creation process but also the output which can be improved and enhanced through interactions with customers. For small KIBS operating in an emerging market like Vietnam, knowledge resources also presented a challenge as Vietnamese labor market lacks of high-quality employees and it is difficult for small KIBS firms to gather top expertise and specialists. In addition to knowledge resource, the capability to build up relationship with customers and other partners in a wider network can facilitate value co-creation process and create more opportunities in the future, especially in Vietnam where relationship is highly appreciated. Young and small companies also pay attention to dynamic capability which enables them to flexibly adapt to a changing environment. Besides, each company can develop and combine different resources and capabilities to build up its own competences according to their historic conditions and strategy.

5. Conclusion

5.1. Conclusion

Our research addresses the following questions: (1) how is the value co-creation process of small KIBS firms structured in a developing country? And (2) what are critical resources and capabilities of small KIBS firms to build up their competences. Therefore this study answering the calls of Payne et al. (2008) and Tuli et al. (2007) for more research on customer's contribution to value co-creation in business-to-business services.

Regarding the first research question, the study identified five key activities in the value creation process as activities: service introduction to target customers, customers' need identification, implementation, evaluation and after sale support. Compared to other studies of co-creation process structure, the study added 'service introduction to target customers' as a highly important activity in the value co-creation for small KIBS firms. This activity not only informs customer about the availability of the service but also approaching customers' need from the beginning of the process. Furthermore, the study supports finding of Aarikka-Stenroos & Jaakkola (2012) as the process is structured not in a linear fashion but maybe iterative process as it is usual as some activities may relaunch or can happen in parallel with each other. The study also confirms the importance of customer involvement in value co-creation process from the supplier perspective throughout the whole process (Aarikka-Stenroos & Jaakkola, 2012; Bettencourt et al., 2002) especially in the beginning as providing necessary information and evaluation at the end of the value co-creation process.

In addition, the study provided a revised framework for value co-creation process of knowledge intensive business services based on the original model by Payne et al. (2008). Although value co-creation process of knowledge intensive business services has been studied in the literature, existed studies often consider this process as a problem-solving process rather than a learning process (Aarikka-Stenroos & Jaakkola, 2012; Woiceshyn & Falkenberg, 2008). In knowledge intensive business services, the issue of knowledge related to KIBS function has been highlighted by other studies (Hertog, 2000; Muller & Doloreux, 2007) as purchaser of knowledge, provider of knowledge and transferors of knowledge. The complexity and ambiguity of knowledge

flow make recent studies more focus on learning aspect in the value co-creation process (Kohtamäki & Partanen, 2016). Therefore, value co-creation process in KIBS would be more appropriately seen as a learning process for both supplier and customer.

Finally, regarding resources and capabilities of KIBS firms for competitive advantage, knowledge is seen as the most important resource which is embedded in human resources of the company. Besides, relational capability is necessary for effective cooperation of customer and supplier in an open dialogue, increase trust, commitment and loyalty, especially in the Vietnamese market. Dynamic capability as the capability to sense and seize opportunities and the ability to configure its resources to adapt to changing environment are also recognized in young start-ups KIBS. It is found that the development, combination and utilisation of these resources vary considerably among companies depending on type of service offering, historic experience or size of KIBS firm.

5.2. Managerial implications

In an emerging market like Vietnam, there is an increase of companies are offering knowledge services such as marketing, market research, technology solution, accounting, especially small and medium-sized enterprises. Although the complexity and customization of knowledge intensive business service offered by small KIBS firm are not very high as compared to these kinds of service provided by multinational companies in developed market, it is the first stage for small businesses in approaching a market where business customers haven't recognized KIBS's significance or applied these services in their businesses. Therefore, when customer and small supplier get in a relationship, the power bargaining of the customer is stronger and this may affect the role of supplier and customer in the value creation process.

However, through studying the value creation of four small successful KIBS firms in Vietnam, it is found that value creation in KIBS is seen as a co-creation in which both customers and suppliers have to take part in to create value for optimal value-in-use. As KIBS is quite new in Vietnamese market and not many customers have experience with that, KIBS firm plays an active role in encouraging customer involved in the process. For a small and young KIBS supplier, customer does not look for them to ask for help 'solving a problem' but suppliers have to actively know and contact their target

customers to make them understand how these services can help their business increase performance or save cost and time. Besides, young companies should take advantage of the internet to enhance customer knowledge of the company's service and have the ability to approach potential customers especially multinational and foreign companies as these companies are seen as early adopters in digitalisation. Furthermore, influencing business customers through changing their cognition about the service is considered as the most effective way to have co-creation opportunities.

KIBS has to communicate with customers throughout the whole process to get customers' opinions and integrate customers' resources into value co-creation at the right time. For example, KIBS has to work with customers to clarify their needs and the firm's ability to meet customer demand by specific objectives and time schedule for next steps. In the implementation, the supplier takes the main responsibility by applying their knowledge and specialization to implement the solution as negotiated from the beginning. However, frequent communication is highly important in order to ensure the quality of outcome as customer expectation as well as successfully deal with any problem arises in this phase. The most important thing is to make customer satisfied. In the evaluation step, small KIBS should take customer feedback as valuable opportunity for them to improve quality of service. Unexpected problems or extra requests from customers can arise at any stage of the process, but usually in implementation and evaluation. Therefore, the process has to begin again from the customers' need identification or many activities are probably happening in parallel to meet the deadline and achieve mutual objectives. The post-services are indispensable in technology solution industry, and for other types of KIBS, maintaining relationship with customers after service providing is important to keep them as regular customer and enhance KIBS's network relationship.

In addition, value co-creation is a learning process for both KIBS firm and customer to improve their competences. The more experience suppliers have in working with customers, the more opportunities there are. For small KIBS firms, value co-creation opportunities with customers are valuable experiences to strengthen their knowledge and expertise as well as develop relationship network for collaborating opportunities. Therefore, KIBS firm has to acknowledge values they learn from the co-creation

process and have the ability to efficiently integrate and utilize these new forms of knowledge into their business to enhance its competences.

Although each KIBS firm has a different combination of resources and capabilities for their competitive advantage, small KIBS firms in Vietnam has to focus on two main types of resources as knowledge of human resources and relational capability. Small KIBS firms should have policies to attract talented, highly qualified people and also training programmes for to regularly equip their staff with necessary skills and improve their knowledge. Besides, relational capability of the organization more depends on manager's capability. For that reason, managers in small KIBS firm, especially founders or directors need to develop relationships with customers, both existing and potential customers as well as partners, even competitors for more opportunities in co-creating and collaboration. Additionally, small KIBS firms specially have to develop dynamic capabilities to sense and seize opportunities in a changing environment and reconfiguring its resources to meet emerging need of the market. In comparison with big KIBS firms, small and young companies have to experience with many challenges as lack of human resources, insufficient investment or limited relationship with customers. However, the higher ability in reconfiguring itself to transform its business in approaching new opportunities in an era of disruption can help small KIBS firm maintain its position in the market.

Finally, by studying the value co-creation from the supplier perspective, the study also provides implications for businesses as customers of knowledge-intensive business services. In order to achieve optimal value-in-use, customer firms also have to get involved in the value co-creation process by providing necessary information for the need identification activity and closely follow the process to give valuable feedback. The cooperation and openness in communication of customer enable KIBS supplier to clearly understand customer need and increase the effectiveness and efficiency of the outcome as a result.

5.3. Limitations and further research

The study also presents several limitations as the following. Firstly, the sample is quite small due to time and resources constraints. Further research can have a larger sample of companies to enhance the validity and generalisation of the study. Besides, the study can reach different level of interviewees in each company to get a deep insight of value co-creation process from different views. Furthermore, it is about the value co-creation so further research should have interviewees from both customer and supplier side to provide a comprehensive view of value co-creation process.

Secondly, the scope of the study was limited to one particular market as Vietnam. It would be interesting to have studies on other developing markets. As almost small KIBS firms in Vietnam publish their performance data on their website or research portal, it is impossible to have quantitative data of these companies in the study. Besides, since it is challenging to reach companies for interviewing, the case companies were chosen purposefully based on several criteria. However, further studies can carry out an industry analysis of knowledge intensive business service in a specific market to have strategic groups and then choose several companies in one specific group to analyse. By that method, both quantitative and qualitative methods are combined to increase the validity of the study. One limitation of this study is that the results are not contrasting young KIBS firms with historical players. Focusing on younger KIBS companies such as start-ups in different industries can be an interesting topic for research.

Finally, knowledge intensive business services include a wide range of service industry. Further studies in value co-creation process can focus on a particular industry to clarify characteristics and specific implications for companies in that industry.

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APPENDIX

Questionnaire for KIBS firm

1. Background information

Name:	Date of the interview:
Company/size:	Industry:
Role/position in the company	Other:

2. Service provided by the firm

- 2.1. What are the services provided by the company?
- 2.2. What are the firm's target customer segments and markets?
- 2.3. What are the firm's critical resources?
- 2.4. What are major competitors in the market? What is the firm's competitive advantage compared to competitors?

3. Value co-creation process

Describe about one typical example of providing service for customers

- 3.1. Why does the firm choose this kind of service to provide for customer? (market opportunity...)
- 3.2. What is the service process like? What are key activities/phases in this process?
- 3.3. How does the firm interact with its customers?
- 3.4. What is customers' problem? How does the firm help its customers to identify and recognize their business problem?
- 3.5. What are critical resources and capabilities the firm use and invest in problem solving process?
- 3.6. Do your customers get involved in the problem-solving process? In which activity?
- 3.7. What are critical resources or contribution are needed from the customer for this problem solving process?
- 3.8. Do you have any metrics/ways to measure or monitor the performance of customer relationship? (Customer feedback)
- 3.9. How does other actors' involvement in the problem-solving process? Can you take example? And why is the involvement of these actors necessary?
- 3.10. What kind of challenges and difficulties has the firm experienced when providing service for customers?

4. Learning from value co-creation

- 4.1. Do you see that the problem-solving process as a joint-learning process in which both parties can share knowledge and learn from each other?
- 4.2. What do you learn from your customer? Can you take an example case? What can the learning experience help to enhance the value co-creation with customers in the future? Can you apply knowledge learning of a specific customer for future cases?

- 4.3. What are critical skills to develop learning capabilities? How is it like in your organization?
- 4.4. How do you see network capabilities support your value creation process? (in communication with customers; in external relationships to enhance quality of service) Can you take an example case?
- 4.5. What is important for value co-creation process when working with customers in Vietnam market?
- 4.6. As a small company, do you have any challenges in working with customers?

Câu hỏi phỏng vấn bằng Tiếng Việt

1. Thông tin về công ty và người được phỏng vấn

Tên :	Ngày phỏng vấn:
Công ty/Quy mô của công ty:	Ngành:
Chức vụ:	Thông tin khác:

2. Dịch vụ công ty cung cấp

- 2.1. Công ty của anh/chị cung cấp dịch vụ gì? Cho nhóm đối tượng khách hàng nào và tại thị trường nào?
- 2.2. Tại sao công ty lại cung cấp dịch vụ này? (nhu cầu thị trường...)
- 2.3. Dịch vụ do công ty cung cấp dựa vào những tài nguyên/nền tảng chính nào (công nghệ hay đội ngũ chuyên gia...)
- 2.4. Đối thủ cạnh tranh của công ty là ai? Hiện tại công ty có vị trí như thế nào trong thị trường?

3. Quá trình cung cấp dịch vụ cho khách hàng

Mô tả một dự án tiêu biểu về việc cung cấp dịch vụ cho khách hàng:

- 3.1. Nhu cầu của khách hàng là gì?
- 3.2. Quá trình cung cấp dịch vụ cho khách hàng bao gồm những giai đoạn chính nào? Những hoạt động chính nào được thực hiện trong từng giai đoạn?
- 3.3. Công ty đã tương tác với khách hàng như thế nào? (xây dựng mối quan hệ, đàm phán, thương lượng, giải quyết mâu thuẫn...)
- 3.4. Công ty sử dụng những nguồn lực nào để giải quyết vấn đề của khách hàng?
- 3.5. Vai trò của khách hàng trong quá trình này là gì? Và cụ thể ở hoạt động nào?
- 3.6. Khách hàng cần cung cấp những gì (thông tin, tài liệu) để mang lại hiệu quả cho quá trình cung cấp dịch vụ?
- 3.7. Công ty anh/chị có công cụ nào để đo lường hoặc tham khảo ý kiến khách hàng về dịch vụ đã cung cấp không?
- 3.8. Có sự tham gia của các đối tác khác vào quá trình cung cấp dịch vụ này không? Ví dụ. Tại sao sự tham gia của các đối tác khác này là cần thiết?
- 3.9. Công ty gặp phải những khó khăn gì trong quá trình cung cấp dịch vụ cho khách hàng?

4. Quá trình học hỏi, đổi mới và mở rộng mối quan hệ

- 4.1. Anh/chị có cho rằng quá trình cung cấp dịch vụ cho khách hàng là một quá trình mà 2 bên khách hàng - nhà cung cấp có thể học hỏi được lẫn nhau?
- 4.2. Công ty anh học được những gì từ khách hàng của mình? Những kinh nghiệm này góp phần cải thiện chất lượng dịch vụ cho khách hàng trong tương lai như thế nào? Lấy ví dụ cụ thể
- 4.3. Những kỹ năng nào đội ngũ nhân viên công ty cần có để cung cấp dịch vụ chất lượng cho khách hàng? Lấy ví dụ cụ thể

- 4.4. Mối quan hệ với khách hàng/đối tác giúp ích như thế nào cho quá trình cung cấp dịch vụ cho khách hàng? Lấy ví dụ cụ thể
- 4.5. Thị trường Việt Nam có đặc điểm gì đáng lưu ý trong quá trình cung cấp dịch vụ cho khách hàng?
- 4.6. Là một công ty nhỏ, anh/chị có gặp phải những khó khăn gì?